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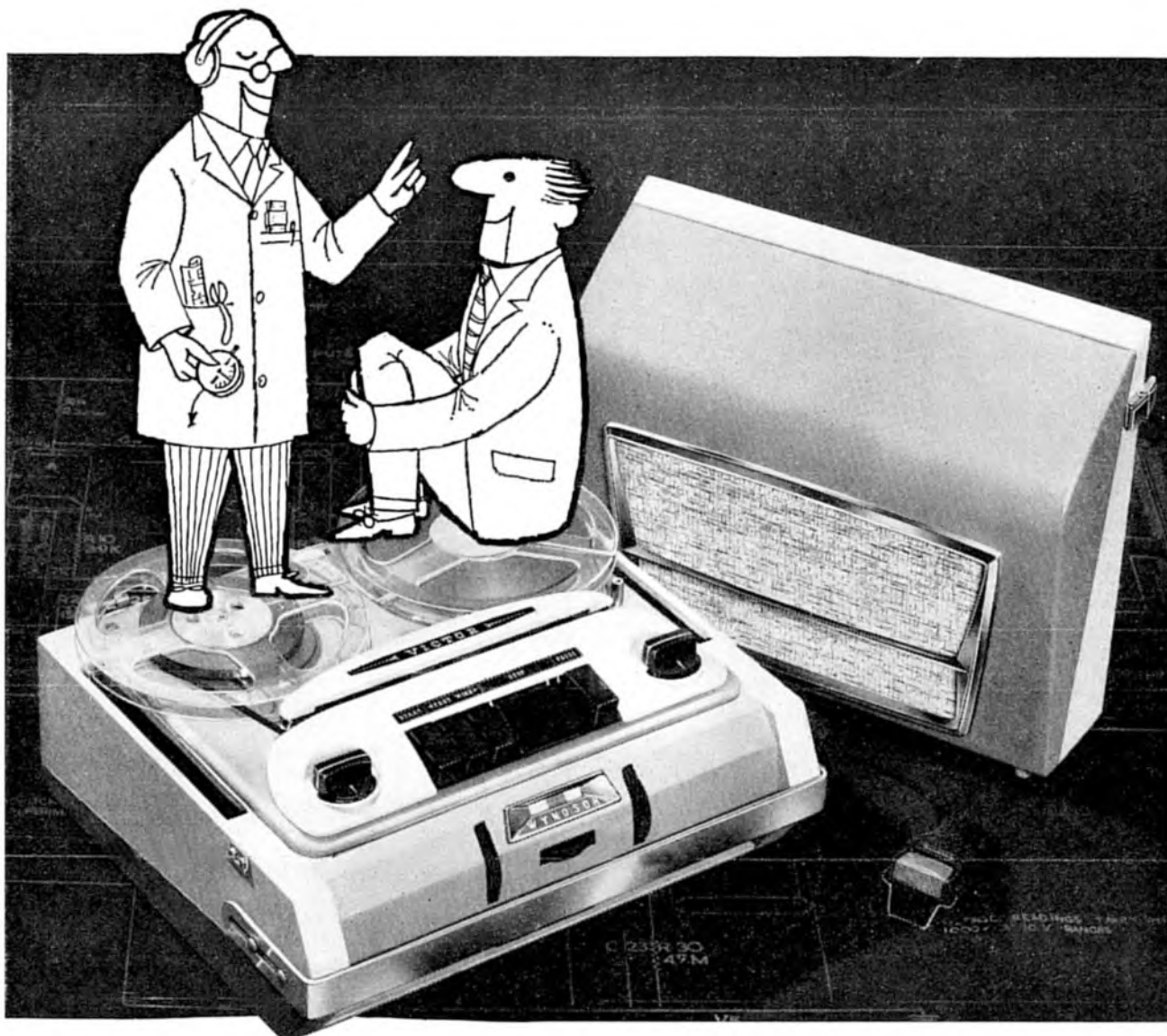
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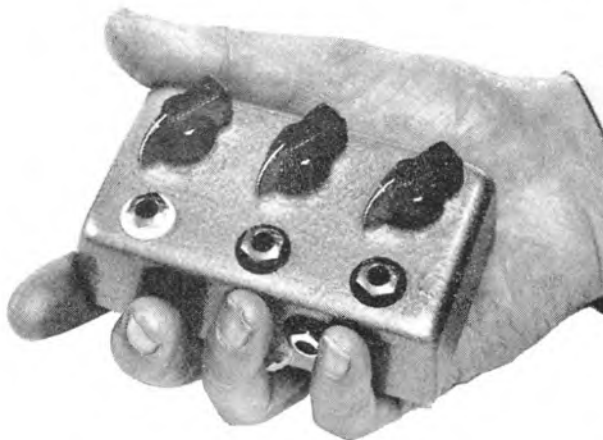
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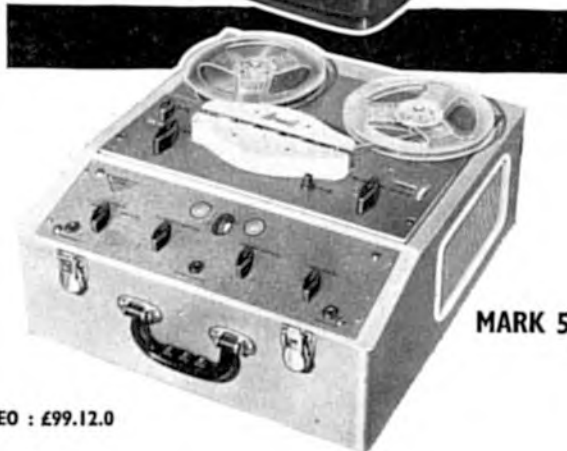
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TAPE

RECORDING
FORTNIGHTLY

Vol. 5

No. 9

3rd May, 1961

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Editor, R. D. Brown

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We take the view . . .

A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

IT is natural to expect new developments and dramatic advances whenever there is a big annual event like the Audio Fair. But, as Mr. Harold Leak, the chairman of the organising committee, told me at this year's highly successful Fair, the achievement of the industry should not be measured in such terms.

There were some interesting new lines at the Hotel Russell, of course. The new EMI machine to play tape and disc aroused keen reaction. As a tape deck it looks like a very workmanlike job and I am not surprised to hear whispers that it will soon be featured in new recorders from a number of different manufacturers.

The Japanese recorders also pulled in the crowds—and it really was the machines and not the kimono-clad glamour girl from the Orient which drew the admiring glances.

It will be necessary to have some experience with these latest British and overseas models before offering

a full assessment, but we hope to be able to do this before long.

The most interesting developments at the Fair probably concerned speakers. It was our first opportunity to hear the Wharfedale column speaker which uses a concrete tube and the new Leak sandwich-cone speaker. Both produce a very pleasant sound indeed.

It is in the field of speaker design that I think we must look for the next big advance in reproduction. I found an animated discussion at the Audio Fair of a speaker that was not on view there, but which some had seen a little earlier at the Paris International Sound Exhibition—the Orthophase. This is said to produce splendid results, but the cost is too high to make it a practical proposition for amateurs.

In fact, the thing that most impressed me about the 1961 Audio Fair

(or International Audio Festival, as I suppose we must now accustom ourselves to call it) was the overall visual and aural impact. The Fair *looked* more attractive than ever before and the organisation of the demonstrations was kept well in hand.

Calling linguists

THE number of tape recording magazines and bulletins published in almost every part of the world is increasing constantly. I now see publications regularly from Sweden, Denmark, Holland, Germany, France, Italy, Switzerland, America and Australia.

I manage to read those from America and Australia carefully. I count myself fortunate, such is my linguistic inadequacy, if I can translate the headings of the articles in the various European publications!!

Among our readers there may be some who are fluent in these languages and who may be interested to have copies passed on to them. They might then be willing to keep me informed of the more important or significant developments abroad which are reported in our various contemporaries.

On occasions we may wish to reprint items from some of them, subject to their agreement, and, in such cases, we should, of course, be ready to pay for translation services.

Will anyone who is open to consider collaboration on these lines write to The Editor, *Tape Recording Fortnightly*?

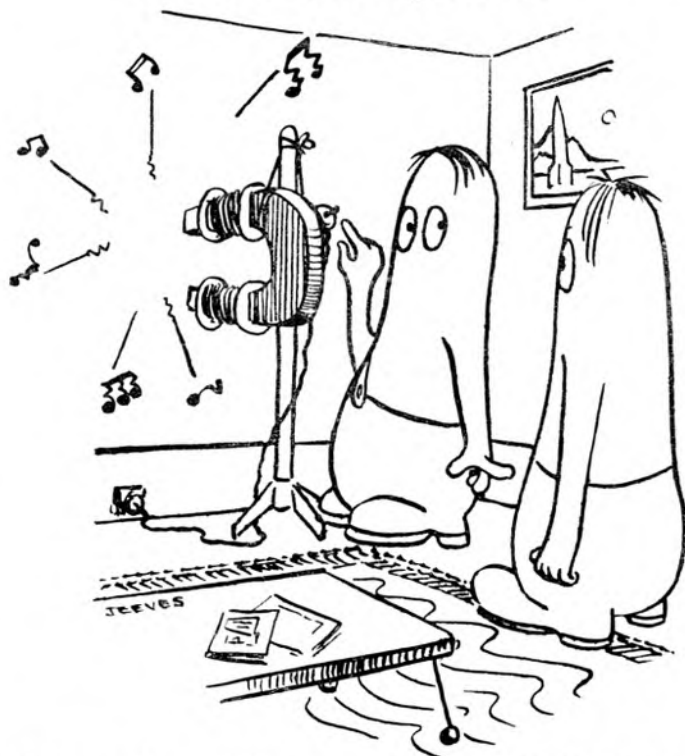
Sound into sight

FRED JUDD, who is well known to readers, tells me that he is engaged in fascinating experiments in the marriage of sound and shape. Working in association with advertising experts, he is producing colour films of electronic sounds.

To achieve the pictures, the sounds are sent from an audio-signal generator or from tape into an ordinary cathode-ray tube from a TV set. Filters for colour are introduced and the camera focused on the screen.

Mr. Judd promises a demonstration before long.

LAUGH WITH JEEVES



"The next door neighbour stores his tapes behind this wall, and once I use this, I get four weeks peace before he records a new lot."

Beverley Sisters present Wilmex Trophy to Editor of "Tape"

THE popular singing trio, the Beverley Sisters, presented the Wilmex Trophy to the Editor of *Tape Recording Fortnightly* at a special ceremony held at the Russell Hotel soon after they had officially opened the Audio Festival.

The Trophy, a solid silver reel holding gold "tape" and standing some twelve inches high, has been donated by Wilmex (Distributors) Ltd. and will be awarded to the winner of the Documentary and Reportage Section of the British Amateur Tape Recording Contest to be held later this year.

Our photograph, taken at the Wilmex stand, shows the Beverley Sisters with the Editor, second from left, and Wilmex co-Directors Mr. A. J. Williams, centre, and Mr. B. H. C. Merrick, fourth from right. Extreme left is the Wilmex Export Manager, Mr. M. Zigman.



RECORD ATTENDANCE AT AUDIO FESTIVAL

THE 1961 International Audio Festival and Fair at the Russell Hotel, London, set up record attendance figures. During the four days it was open—April 6-9—39,143 persons attended. This was 5,000 more than the previous highest obtained in 1959.

By four o'clock on the opening day, when the Fair was visited by trade and Press representatives, 6,400 trade tickets had been given up, including 600 from overseas visitors.

Saturday and Sunday also had individual record attendances, providing more guidance that the Audio Fair is now accepted as the highlight of the British Audio Year.

The international flavour of this year's fair was much in evidence, and a number of representatives from foreign fairs were present to comment on the organisation of the British Fair.

Exceptional praise came from Mr. McProud, the man who organised the first audio fair in America, and one of the guiding lights in the American audio market. He told Col. C. Rex Hassan, organiser of the Russell Hotel exhibition, that the discipline of the firms exhibiting at the fair was remarkable.

In America it seems, manufacturers liberally adorn the demonstration room corridors with confusing advertisements. He was pleased to see the limitation of one sign-post for every exhibitor, which provides ample guidance for visitors.

Mr. Malt Wheldon, another American audio fair organiser, and the President and Secretary of the French Audio Festival were present with Mr. McProud at a special Dinner for overseas representatives given by the British organiser.



Vivienne Gooding, left, and Mrs. D. Bolton

By VIVIENNE GOODING

"BEST of luck, Miss Gooding!" murmured a glamorous young programme seller as I pushed my way with the queue of eager audiophiles into the Audio Fair.

Before I could recover from the surprise of being acknowledged almost before I had set foot in the building. I was spotted again, this time by a young couple.

"Look! That's her!" I heard the "she" loudly whisper to the "him."
"Shall I . . ."

I suppose during all the hours I spent in the fair on the Saturday I was recognised a couple of dozen times, but not one of those people would pluck up enough courage to challenge me and claim their tape. Is our native reserve stronger than even I had thought possible?

I was more successful on the Sunday when I stayed nearly twice as long at the Fair, arriving soon after mid-day and only leaving as the exhibitors struggled to dismantle their stands.

Once again a slight degree of reticence was noticed at first, but I was eventually challenged by Mrs. D. Bolton of the Ilford Tape club. The challenge was given correctly, and I was very pleased indeed to hand over to her the spool of tape as promised. Congratulations, Mrs. Bolton!

GERMAN AUDIO EXHIBITION TO BE BIGGEST EVER

THE German Radio, Television and Phono Exhibition Berlin 1961, due to be held from August 25-September 3, is to be the biggest exhibition event there this year.

The first such exhibition to be held in Berlin for 22 years, first held there in 1924, it was then held regularly until 1939. Since the war it has featured three times in Dusseldorf, and twice in Frankfurt.

A mixture of fair, show, and exhibition, this German equivalent of our Radio Show, is aimed at laymen and experts alike. It presents the latest developments in the field of television, radio and recording, and has always been an occasion for numerous cultural events outside the exhibition proper.

This year there will be 150 exhibitors in 13 halls, and the total space will cover some 24,000 square yards which will be used to show everything connected with the fields of the radio and television industries, of accessories, building elements and the recording industry.

The latter intends to enrich its exhibition hall with a special show programme and daily rendezvous with well-known artists.

Daily events will include competitions, fashion shows, dances, and folklore, which are planned for the summer garden, one of the most beautiful in Germany. The first event will be a festive ball on August 26, and the final one will be a tattoo staged by the British Forces in Berlin and a large firework display.

MAN IN SPACE — ANTS ON

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FORTY-EIGHT people from all over the country attended—including some with broadcasting experience in different parts of the Commonwealth. As with previous courses, the students came from all walks of life, with the teaching profession well represented. Thirteen teachers from grammar, primary and secondary schools attended, and other places were filled by clerks, electrical and mechanical engineers, salesmen, and members of the theatrical profession.

There were also representatives of the Bristol, Catford, Nottingham and Sussex tape recording clubs.

The list of tutors for the six-day course included a number of names very familiar to readers of this magazine. Instructing were John Borwick, Fred Judd, and Sam Wheatley, whose practical sessions of handling battery tape recorders were described as being as popular as his articles in *Tape Recording Fortnightly*. Also on the team of tutors were Graham Jones and Desmond Briscoe, Head of the BBC Radiophonic Workshop. Mr. Briscoe provided a great stimulus to students drama producers after giving basic mixing and tape instruction during the first three days of the course. Four other BBC men—Richard Burwood, Robert Gunnell, Kenneth Pragnell, and Jack Singleton led the magazine production classes.

These were some of the nineteen drama and magazine items for the Fourth National Tape Recording Course held at the Rose Bruford Training College, Sidcup, Kent

Classes in the first part of the course included "How to get the best from your tape recorder and microphone," "Editing," "Handling portable recorders," studio operations, and drama production.

On the third day, the students progressed to "Improving amateur recordings," equipment and accessories, recent developments in the tape field, and creative recording.

On the fourth day the previous groups of six persons each were brought together and divided into the two basic groups for advanced instruction on two divisions of the course. On the following day the two groups reversed their instruction and dealt with the untouched part of drama or magazine production.

And on the sixth and final day the entire school heard a playback of selected

course tapes, and afterwards discussed the problems met during instruction. George Dixon led the discussion, and made many valuable suggestions.

Throughout the week students were employed in the various special studies set up for the course. After theoretical and practical instruction on a particular theme in these studios, they went out into the surrounding area for field recording experience.

A typical example of the problems met "in the field" was reported by apprentice gas-fitter Mr. J. Farrer of London, who with Kent journalist Mr. J. E. Periam, went to collect interviews with customers at a Supermarket. The manager of the store, greatly surprised at the "invasion," refused to allow any recordings to be made and the boys had to content themselves with interviews made outside the shop. One wonders if the students tried proving they did not have two bundles of laundered clothing with them.

Quite the reverse reception was experienced by Mr. R. F. Beaton of the Bristol tape club, who with Richmond and London schoolteachers, Mrs. W. A. Bayliss and Miss A. Dalton, visited the Sidcup Fire Control Centre.

They were greeted with open arms, and invited to roam at will with the recorders. They even had a special Emergency Call laid on for them.

One member of the course who paid particular attention to the instruction on battery portables was the Rev. S. A. Cann, a missionary priest, taking advantage of his leave in London to attend the College. He works in the Central African University Mission at Mbewa, Tanganyika, and finds his recorder a great asset in his job. He has one of the early M.S.S. recorders, which he uses to record African music for out station services. On his return, he intends to record complete services in Swahili, and continue his research on African hymn tunes.

Norman Littlewood of the Nottingham tape club was the technical assistant on the course which was organised by Peter Palmer and Directed by Geoffrey Hodson.



A happy crowd of students seen during one of the drama production classes. The popularity of this course is indicated by the presence of a number of students who attended for the second consecutive year.



Above: Mr. R. F. Beaton of the Bristol tape club handles a Grampian DP/4 and a Fi-Cord as London schoolteachers Miss A. Dalton (back to camera) and Mrs. W. A. Bayliss simulate the action following an Emergency Fire Call. Extreme left is one of the Sidcup Fire Control Centre staff. Below: The Rev. S. A. Cann discusses the Minivox C with Sam Wheatley, the "King of the Portables." Right: Trouble in store, so Mr. J. Farrer, with microphone, collects views outside a supermarket. Technical assistant is Mr. K. E. Periam.



Im Wheately's

NOTEBOOK



The pioneer days of recording were great fun

THE photograph on this page, taken in 1956, illustrates the lengths to which we went at the BBC to get good "out-of-the-ordinary" recordings with the L.2 midget recorder. Pioneering was great fun and I found the "Younger Generation" and "Children's Hour" programme organisers were the most adventurous.

In 1955 Tony Gibson came to me with a request to use an L.2 for an item on a teenager learning to dive with an aqua-lung. Normally, the face mask used for this covered the eyes and nose, while breathing was maintained through a snorkel tube held in the mouth—and pretty firmly at that.

Naturally no mouth or jaw movement was possible; and no articulation meant that no intelligible sounds were forthcoming.

First, then, a full-face mask was necessary, so that it would be possible to speak into a microphone if one could be fitted into the mask. Leakage of water could not be tolerated, both for the safety of the diver and the operation of the microphone.

What kind of results would be obtained under water no one then knew, but I did know they would not be of any quality. If, however, intelligible speech could be obtained for short periods, another new field was opening up.

A mask of the Service Respirator type was obtained and modified to take a supply from compressed air bottles.

Experimentally, I fitted an Acos 28/2 crystal microphone into the mask, on the wall (which was moulded rubber), so that it came about cheekbone-high. The wire was brought through a watertight gland.

There was no lack of volume from this position, but the sound was very muffled, due to the confined space and the rubber surroundings.

Tony's teenager proved to be a young

lady and the venue a deep pond in Kent. I allowed about fifty feet of co-axial cable, since the question of quality at this stage was not the first consideration.

On a cold December day this intrepid teenager donned her winter woollies (her Dad's long pants, several pullovers and the rubber suit into which she was levered by her instructor). Finally I fitted her mask and did a dry-land test. Her voice came through loud, if not clear.

She then entered the water and disappeared from view. At first nothing came through on the monitoring headphones but the sound of air bubbles as she breathed in and out. I was glad to be able to monitor these experiments; at least one knew that the victim was alive!

After a bit, she began to speak, but it was difficult to understand what she was trying to say. I had found myself how hard it was to speak as well as draw air from the air-bottles through the demand valve, so, when she came up, I asked her to try to speak in very short sentences, slowly, not worrying about the gaps while she got a good deep breath.

On her second attempt it was better and I recall the nice feeling we all had when she was able to describe the collection of debris she found at the bottom of this dark and dismal pond, 15 feet down. It was a start, and it led to many further adventures.

I decided, however, that if I was to make any real progress I should have to do the experiments myself. The case shown in the photograph was made to enable me to have the recorder with me under the water to see and hear the results myself.

One thing leads to another and when the BBC was preparing its equipment for the South Pole Expedition in 1957 the question of giving protection to the L.2 portable recorders in conditions of wet snow and ice slush was solved by providing plastic boxes like this one for underwater work.

A harness was designed so the user could carry the recorder safely but have hands free for operating and holding a microphone.

Donald Milner, our reporter on that expedition, was very pleased with the job we did for him and sent back some

fine recordings made in situations and on sites which would have been impossible without a well-protected portable recorder. The photograph shows Donald fully kitted for his assignment.

All this was back in 1947, and a lot of water has flowed over midget recorders since then.

* * *

A few weeks ago I heard an interesting item in "Today." My old colleague, Bryan Johnston, was interviewing a prize-winner in a BBC essay competition; she was explaining why she would like to become an Outside Broadcasting commentator.

Bryan escorted Vicki round the Television Centre and then he asked if she would like to do a mock commentary. She was to assume that she was to describe a state procession, but there was an unforeseen delay, Vicki had to keep the broadcast going by ad lib comments on the scene.



The L.2s were protected in plastic boxes when they were used on the BBC South Pole Expedition of 1957

A very trying and difficult assignment for any commentator. I hope Vicki had a chance to hear a recording of her attempt afterwards. She made a brave try.

One or two of the faults I noticed in her performance may be a useful guide to others. Firstly, there was a lack of light and shade in her voice, much too even level tone. Then there was a concentration on the physical surroundings but little on the crowd and its behaviour in the face of the unusual delay. There would be manifest eagerness and concern which would have to be commented upon.

Vicki confessed that her heroine amongst commentators is Audrey Russell. A fine standard, too. I'm sure Audrey would be the first to tell her that it is not only necessary to have a lift in your voice, but the light in your eye as well, if you are to capture the interest of the listener.

TAPE IN THE SCHOOLS

GEOFFREY HODSON

edits the latest news
— and comments

“TAKE TIME TO PAUSE”

KENNETH METHOLD'S book, *Broadcasting with Children* (reviewed May 17, 1960), was the first to describe the formation of a school tape club. My colleague, Dr. C. A. Smith, also wrote on the subject in the August 1960 issue of *Amateur Tape Recording*.

I revive the subject here because such interesting news is coming in from schools that I am starting a new feature on this page next month highlighting individual clubs.

With a new club the question is always what to do. A glance at the reports from the tape recording clubs at the back of this magazine will show a variety of activities, but a careful study over a number of issues will show that very few in fact have a definite scheme of activity.

In both school and adult clubs one of the difficulties of the organiser is catering for a wide variety of tastes and experience. Consequently, in planning a school tape club, you must provide a range of activities which will occupy everybody for more than part of the time.

(*Theseus*, “Midsummer Night's Dream”, Act 1, Scene 1)

What should you do? First, find out how much equipment is available. One tape recorder with tape and a microphone is sufficient, but many boys and girls can supplement this.

Second, where are you going to record? This is the thorny one. Most schools have some noise to contend with, even when the children have gone home. So you must search out your own quiet spot. An old carpet and some drapes or curtains or screens can help kill some of the unwanted reverberation. The school stage is often a very good spot.

Third, make sure that all members have at least a very simple idea of how the machine works from the theory angle, and that they can actually operate it competently. Find out about tape (see February 8 issue). Learn how to splice on leaders and repair breaks. Discover about *acoustics* (relation of the microphone to its surroundings) and *perspectives* (relation of the performer or sound

source to the microphone). And I hope you will do all these things on lots of practical work. No one ever learnt how to fly or drive by just listening to lectures.

Fourth, try out the different microphone techniques: solo talks, interviews, discussions, drama, choir, solo instruments. “Try out” is the correct term, because even BBC Studio Managers, who position microphones as part of their daily job, are constantly trying out new ideas.

Fifth, plan your activities. Kenneth Methold gives lots of ideas in his book. You can produce a play, put together a magazine programme (see Jack Singleton's “Keeping an Eye on the Saints” in this issue), record a dramatic interlude or other insert for Morning Assembly, prepare a programme for the Old Folk's Club or the local hospital.

This is just to start you thinking. The regular feature articles and the schools news items in this magazine will help fill in the details.

Why don't you write in as well?

“LET'S not be too ambitious. Here's a single page of dialogue bristling with perspective problems. If we can do this well we shall have accomplished a lot.” So said John Bell to his “Drama on Tape” group at the Manchester University School of Education Drama Workshop, April 10-15.

In five 90-minute sessions Mr. Bell outlined the theory of radio drama production, and produced a short convict thriller with them.

Incidentally, Mr. Bell was very pleased when I met him. His first contribution to the BBC morning magazine programme “Today” had hit the jackpot. It was repeated in the coveted “Pick of the Week” programme.

(More school items on page 16)

RECORDING BBC SCHOOL BROADCASTS

IS it in fact illegal to tape-record BBC broadcasts for use in school, as is often suggested? This question was put to the Rev. Douglas Stewart, Assistant Head of Religious Broadcasting, BBC, at Ipswich recently. Amid laughter, he replied that he must not be asked that particular question.

The Times, February 10, 1961

RECORDS of BBC School Broadcasts may be made by schools without obtaining the permission of the various copyright owners (BBC, owners of musical and library materials, gramophone records,

dramatic and musical performers) provided that the records are only used for instructional purposes in class and that they are destroyed at the end of the school term.

This welcome announcement in the *Radio Times* must have eased several thousand consciences in Britain!

It makes legal a common practice which has eased the problem of fitting these broadcasts into the normal framework of the school timetable.

Technically, it will be some time before schools can tape television programmes, but there is no doubt that that will be a happy day, too.

WHO WAS FIRST?

“WHO was the first teacher to use a tape recorder in the classroom?” This was the opening sentence when this column started last year (May 18, 1960). A. W. Bartram of Chatham Technical School, Kent, may be the answer.

As Kent Optical Aids Adviser he introduced the first commercial tape recorder into K.E.C. schools “some time about 1950.” But he built his first disc recorder in 1935 when still a boy, which he later used in 1939 as a young Primary teacher.

By 1940 he had built a crude wire recorder, which he later used coupled with a home-made episcopic cartoon film projector showing boy-made animated cartoons. And in 1947 he made his first tape recorder and used it in school.

Is this the record?

RECORD THESE AT THE END OF TERM

“May We Recommend” by Ian Ball and Marion MacWilliam (*Longmans*). Books 1-6 (3s. 3d. each). *Introductory Book* (4s. 9d.).

MAY WE RECOMMEND plays are broadcast regularly from Scotland in what used to be called “Children's Hour.” Forty-eight are published in this excellent series, all adapted from well-known stories of proved interest.

Their aim is to encourage children to read the books on which the dramatised excerpts are based. Professionally produced they are very effective, but, although I understand they have been edited for school use, they look a little difficult in their present form for any but the more able child.

Some of the narration is too long for children to sustain, for instance, and the total playing time (estimated 15 minutes) will require considerable rehearsal to give any polish to the finished production.

But with careful editing teachers ought to be able to use the plays with their classes, and they certainly make good propaganda for the school library.

It might be a good idea to record two or three as an end-of-term activity and gradually build up a library of tapes. Your children will want to prepare their own programmes very soon, which is excellent. A set of *May We Recommend* for reference and use will show how the professional sets about his work.

TAPE IN THE SCHOOLS

(Continued from page 15)

EURATOM (European Atomic Energy Community) announce they have put back the closing date for their tape competition for schools to October 30.

The competition is open to individuals, or groups of not more than ten, who are asked to "Illustrate in sound, as expressively as possible, the history of nuclear research throughout the world, and the part Euratom is playing in this development." A prize of 970 dollars will be awarded to each of the national winners, and a further 1,940 dollars will be given to the best of the national entries.

Further details are available from the Press Office, Delegation in UK of Euratom, 23, Chesham Street, London, S.W.1.

* * *

A DEMAND for pre-recorded tapes is beginning to make itself felt in this country. To meet a local need, a group of London teachers recently decided to produce five pilot programmes during the summer term for Junior and Secondary schools.

The subjects chosen were poetry, story telling for eight-year-olds, and commerce. It is hoped to offer the tapes to interested schools after Whitsun.

Further tapes are proposed after studying the experience gained in making the pilot tapes and the reactions of schools using them.

* * *

A SCOUT HUT, which also does service as a classroom and drama workshop, is the radio studio at Harold Rottesman's school in Cheadle, Cheshire. He gave me a whirlwind tour over it two weeks ago, and showed me the separate control room Michael, his schoolboy engineer brains, is constructing.

Basically, the set-up is built round a Ferrograph, and it is highly mobile. He used it for many successful tape productions when he was up at Oxford.

Next month, his school *Microphone Society* will open a new feature on this page, "School Tape Clubs."

B.B.C. "Sound" Programme

A magazine for radio and recording enthusiasts

Introduced by Douglas Brown

6.40 p.m. May 8

(A repeat of the programme broadcast on April 30)

SOUND IN THE THEATRE: Harry Craig discusses with Peter Hall and Donald McWhinnie some interesting uses of sound effects in current stage productions in London

"Sound" is broadcast on alternate Sundays at 2.40 p.m. on Network Three

KEEPING AN EYE ON THE SAINTS

The first of three articles on the teacher and the tape recorder by BBC Producer JACK SINGLETON

The author is well-known for his productions of such programmes as the Tuesday morning "Two of a Kind" series, "Thursday Roundabout", "Frankly Speaking", and "The Travellers".

CHARLES LAMB liked the red-letter days on the calendar, Saint's days, holy days, because I suspect they were sometimes holidays. I welcome them because they occasionally spark off ideas for programmes. Take October 25 for example—St. Crispin's Day. Here was a God-given opportunity for a twenty-minute anthology of songs, stories, poems, etc., in celebration of St. Crispin and shoemakers.

How did I fan the spark into a flame? I had, of course, the resources of a gramophone library of over half a million records, discs from the BBC archives, reference books in plenty and the facility of a studio and technical know-how behind me. But basically, if less ambitiously, the project is translatable into the classroom in terms of a single tape-recorder, a gramophone and a teacher with elementary knowledge of tape-editing.

I began by jotting down anything that came into my head that might be of interest connected with cobblers—song titles, snatches of poetry, nursery rhymes, and questions such as "Who was St. Crispin?", "Are there still any customs observed today?"

I explored each idea further, sorted out the ones I thought would make the best listening and arranged them into a pattern (I shall return to what makes attractive listening in a later article). I then wrote suitable paragraphs to link the items and my final

shape was as follows. (The numbers on the left are for quick reference in rehearsal and the minutes and seconds respectively are given on the extreme right.)

ST. CRISPIN'S DAY

1. **Announcer:** This is the BBC Home Service. Here is Jack Singleton to introduce "All Of A Kind."

2. **Singleton:** And "All Of A Kind" this morning is in praise of "brave shoemakers all, gentlemen of the gentle craft," for October 25 is St. Crispin's Day, St. Crispin's Day with its memories of Henry V and Agincourt.

3. **Grams:** *HMV ALP 1375, Side 2, Band 4—Sir Laurence Olivier's speech and William Walton's music.*

Fade after 2 mins. 20 secs.

4. **Singleton:** Who was St. Crispin? Tom Skillen, himself a shoemaker and a member of the St. Crispin's Society of Shoemen, recounts some of the stories and legends that have gathered round his patron saint.

5. **Tom Skillen:** (Gives account of legends and how they arose, ending with mention of service at St. Crispins, Bermondsey, and annual ceremony of hoisting a shoe to church tower.)

4 min. 20 sec.

6. **Singleton:** Songs and stories and sayings about shoemakers are legion. Little children shout the nursery rhyme—

Cobbler, cobbler mend my shoe,
Get it done by half-past two,
Half-past two is *much* too late,
Get it done by half-past eight.
And here is Mary Murphy, an old Irish lady of 71. She learnt this song over sixty years ago from schoolmaster McCann of County Cavan.

Another in our regular series of articles introducing children to tape recording

7. Grams: *RAT-A-TAT*, Permanent Library Disc 1 min.

8. Singleton: Perhaps the best-known song about a shoemaker is the Cobbler's Song from the musical comedy *Chu Chin Chow* sung here by Inia Te Wiata.

9. Grams: *THE COBBLER'S SONG* 2 mins. 50 secs.

10. Singleton: The Gentle Craft easily lends itself to punning and word-play. Remember *Julius Caesar*, Act I, Scene I? Rome, a street, enter Flavius, Marullus and certain commoners.

11. Grams: *ARGO RG 132, Side 1* (The Marlowe Players) 1 min. 55 secs.

12. Singleton: On the shoulder of Cardon in the Border Country, lives a shepherd poet who calls himself Tom Kilbucho. One of his poems is about a cobbler who left his craft when he won the hand of a well-dowered bride in the face of well-breeched rivals. Hugh McDiarmid introduces the poet.

13. Grams: Permanent Library Disc 18093, Side 2 2 mins. 5 secs.

14. Singleton: And last—the word had to come in somewhere! I don't mean what the cobbler sticks to, although the origin of the saying is interesting. The tale goes (here I quoted from Brewer) . . . Well to stick to mine, last we have Petula Clark with an order for le petit cordonnier—the little shoemaker.

15. Grams: *NIXA NPT 19002, Side 2, Band 4* 2 mins. 10 secs.

16. Announcer: In that recorded edition of "All Of A Kind" Jack Singleton introduced songs, stories and poems in praise of St. Crispin and "the brave gentlemen of the gentle craft."

* * *

You will notice in my running order that apart from the passages linking the items and the shoemaker's talk, the rest of the programme was recorded from discs, either commercial or BBC Library. This would not be feasible—or desirable—in school. How would I tackle St. Crispin in the classroom?

Invite the class to think up items, having explained the project. Probably few will be forthcoming at first. Suggest sources of ideas. The following might help. Brewer's *Dictionary*



The author interviews a young Algerian for a programme he produced when he attended an International Youth Camp organised by the Essex Education Committee

of *Phrase and Fable*, a book of saints, Opies' *Lore and Language of School-children*, encyclopædias, Quennells' *History of Everyday Things*, dictionary of quotations. All these are to be found in the library.

A reference in a quotation could lead to looking up the passage in the original work, e.g. Shakespeare's *Julius Caesar*. A talk could be prepared on the history of footwear from the simple sandal to the stiletto heel or winkle-picker toe. Original poems, or episodes (to be acted) from St. Crispin's life, might be written.

TAPE IN THE SCHOOLS

The class may know a local cobbler who will spare an hour to be a one-man Brain's Trust, and answer questions prepared by the children on his craft. Tape this separately.

Half the items in my BBC programme I would change for school, but I would retain the film-track record of Laurence Olivier because of the thrill of listening to such superb oratory allied to Walton's stirring music. *Caesar* I would keep too, but have it acted by the class. It is short, humorous, and involves a crowd! It also affords an opportunity to talk about puns, a favourite form of schoolboy wit.

Songs could be rehearsed and recorded in co-operation with the music teacher, although the background to them—The Cobbler's Song from *Chu Chin Chow*—can be discussed in the English lesson.

Decide the order of the different items bearing in mind the need for contrast, and get the class to write the linking passages. This is more difficult than it looks. Brevity, clarity and flow are of the essence. It will probably be necessary to tape some of the items separately, but it is more fun to do as much as possible at the same recording session.

The class should listen and criticise—perhaps amend—the programme before it is broadcast over the school loudspeaker network, or at morning assembly or to the Parent-Teacher Association.

Having put Crispin to bed, tackle another saint. April 23 offered George, Shakespeare's birthday and Zeebrugge! The summer term also embraces Augustine of Canterbury, the Venerable Bede, John the Baptist, Peter and Paul among the saints, and Anzac Day (April 25), Commonwealth Day (May 24), Union Day—South Africa (May 31), and Dominion Day—Canada (July 1). Fifty years ago (May 29) W. S. Gilbert died, and a hundred years ago Palgrave published his *Golden Treasury* (July) and Elizabeth Barratt Browning died in Florence (June 30)—all worthy of exciting commemoration.

SHAPING SOUND-1: Deliberate distortion

In the first of a new series of articles ALEC NISBETT describes some of the techniques used for introducing filtered sound into dramatic productions

GENERAL INTRODUCTION TO SHAPING SOUND SERIES

OVER the years, the primary aim of audio engineering has been to approach ever closer the ideal of perfect fidelity in sound reproduction. But as our technical grasp of the means of eliminating distortion in all its forms has been extended, so also has our ability to use and control distortion for creative purposes.

Deliberately distorted sound may be used in many ways, ranging (to mention two of the more obvious cases) from "telephone" quality for straightforward use in radio plays, to the doctored sounds of "musique concrète."

But what must be remembered when we are talking about distortion is that practically every sound we ever hear in mono—however hi fi—is a rearrangement of reality according to a certain special convention. Monophonic sound, in fact, is distorted sound in every case except the one where the effective point source of the

loudspeaker is being used to reproduce a sound which is itself confined to a similarly small source.

Thus, every recording (even of, say, a single voice) for which you have made what is called a "balance,"—a satisfactory combination of direct and indirect sound—every such recording is a deliberate distortion of what you would hear if you listened to the same sound "live." But this distortion is accepted so easily as the conventional form of the medium that very few people are even aware of it, until they are required to compare mono directly with live sound or good stereo (the relationship between the latter two is a complex study in itself, the subtleties of which are way beyond the scope of this particular article!).

Perhaps distortion would be better defined as "unwanted changes of quality," rather as noise is sometimes defined as "unwanted sound"; and in this case mono

would not perhaps qualify as distortion (this would depend on the requirements of the listener). But then we would be left without any word for the creative re-shaping of sound.

Anyway, we must accept that, using the term in the broader sense distortion is for ever with us; that sound is continuously being moulded to one end or another; and that the listener is constantly being required to accept one convention or another for its use.

The more extreme forms of this include such processes as filtering, transposing in pitch and duration, the physical editing of sounds, the addition of artificial reverberation or echoes, and the synthesis of sound from electronic sources (pure tones, harmonic series, and coloured noise).

All of these—which should perhaps be regarded as extensions rather than distortions of the medium—will be discussed in this series of articles.

LET'S consider first of all some of the simplest and most obvious applications for one particular form of distortion: restriction of the frequency range by the use of filters. And for a start, we'll take one particular case of this: the production of simulated telephone quality for plays.

The BBC employs for this a box of tricks called a Portable Effects Unit, which provides sharp bass and top cut at various set frequencies, and can be plugged into any microphone circuit either before or after the first amplifier stage.

In a full-scale studio set-up it is usual to have two microphones, one normal circuit and the other (which is called a "distort" mic) with the PEU in circuit. These two can generally be placed in different parts of the same studio, the idea being that they should not be separated so much that the actors cannot hear each other direct. This arrangement avoids the necessity of juggling with headphones—which can be awkward when holding a script.

In such a set-up it is particularly important to avoid "spill," which in this case means pick-up of the "far" voice on the normal microphone; otherwise the effect of telephone quality will be lost. If the "near" mic is of a directional type (such as a ribbon), and it is placed with its dead side towards the "far" voice the pick-up of direct sound will be effectively prevented. But discrimination against reflected sound presents more of

a problem, so it sometimes helps to use the deadeast part of the studio for the distort microphone. As spill from the full-range to the distort microphone will not noticeably change the quality of the "near" voice, it doesn't really matter very much whether this second microphone is directional or not.

The two microphones are mixed together at the control desk (in some studios the distort controls are also conveniently built in to the desk) and the relative levels are judged by ear. When this sort of distortion is being introduced into a programme, meters will be even less use than usual in matching the two voices, as the narrow-band input will contain less bass, and therefore less power, for similar degrees of loudness.

But in any case, equal loudness from the two voices will not generally be required. At normal listening levels there is very little difference in intelligibility between full range speech and the narrow band used to simulate telephone quality; a fairly considerable reduction in the loudness of the distorted speech may be tolerable in the interests of creating a feeling of actuality. (In the studio I have often found that the lower limit is fixed by the setting at which spill becomes noticeable, rather than by loss of intelligibility.)

So much for studio layout and mixing. The next part of the job is the selection of suitable settings for the bass and treble filters.

Now, telephone circuits may have a band width of some 2,000 cps, with a lower cut-off at about 300 cps. So it may seem curious at first sight that, amongst the various degrees of bass cut provided on the PEU, 300 cps does not figure: the nearest alternatives are 220 or 440 cps.

The reason for this is that, as always in such cases, the choice has to be made by ear. And the degree of cut that seems most appropriate will vary from one play to

another—or even between different "telephone" conversations in the same play.

One factor which has a bearing on this is the difference in voice quality between male and female speech; and between different examples of each. If the fundamental of a male voice is at 110 cps, then a cut at 220 cps will give a small but appreciable change of quality. For a female voice with a fundamental an octave higher, the 440 cps cut will clearly be more suitable. But 440 and 880 cps are, I would say, more often used than the lower setting—it is better to slightly over-emphasise by suggesting the loss of bass than you would get if you held a telephone earpiece a little away from your ear.

Indeed, the need for dramatic emphasis may take us still further into the realms of distortion, and we may place the "far" microphone against a reflecting surface, or clip some sort of baffle to it. A piece of hardboard might be used for this; or for a small microphone a flattened cigarette packet and an elastic band will do the job.

If a baffle is used with, say, a ribbon microphone the result will be to create a standing wave pattern about the diaphragm and to make its response decidedly spiky. In a microphone with a bulky or poorly designed casing you will get this effect anyway, so little may be achieved by adding a baffle—but on a good ribbon microphone (which does have a very smooth response) the distortion would be marked.

Alternatively, you might choose a mic which has an edgy response in the first place; or a better one might be used at an angle for which its frequency response is erratic. It will be clear that there is no necessity to have two high quality microphones for this job—for the distort mic almost anything will do.

The use of background effects may make a considerable difference to the picture, and the degree of distortion and relative volume finally selected must depend to some extent on their loudness—and also on their

SHAPING SOUND-1: Deliberate distortion

In the first of a new series of articles ALEC NISBETT describes some of the techniques used for introducing filtered sound into dramatic productions

quality: effects which are topky in quality will tend to blot out quiet speech; whereas if the backing is fairly woolly or boomy the shriller telephone effect will have little difficulty in cutting through it. In either case, the mix must be very carefully monitored to check that intelligibility is reasonably high—unless, of course, the script requires otherwise.

A fairly complicated scene may need varying degrees of intelligibility. For example: a script may indicate that the first part of a conversation is to be waged against loud party chatter with the other end barely audible; and that after some such line as "Hang on, I'll just shut this door", an effects door-shut is to be followed by a drop in the level of the backing, so that both ends of the conversation are clear.

An additional point that is worth thinking about in this sort of case is that if you are after a sense of actuality the backing should really also change in quality; heard through a real door such effects would become muffled and muddy, as well as being reduced in volume.

I mention this particularly, because this is one of the few cases where the amateur's technique of superimposition may easily achieve results which are as good as or better than those which can be obtained with a full-scale professional mixer desk. If the backing effects are recorded first and the "telephone" conversation is then superimposed, the change in the frequency response of the first-recorded signal should give a pretty good imitation of a "party-in-the-next-room" sort of effect.

It should be noted that this use of superimposition does not, in itself, do away with the need for a mixer for combining the two ends of the conversation. There are ways of managing without a mixer, but if you own or have access to one the job is a great deal easier.

A somewhat complicated way of avoiding the use of a mixer is to record the sequence twice over, once with the filter and once without (yes, take the *whole* sequence twice—this will make it easier to get the timing, intonation and reactions right. But take care not to overlap speeches). Complete the job by editing together alternative lines from each version. But remember that unless there is no background noise whatsoever, you will be in trouble. Any "atmosphere" recorded will have an oddly discontinuous effect—which is all right if every line ends with "Over to you, over!"

If you do use this technique and it does not quite come off you may be able to wallpaper over the cracks by adding a new overall backing. But for this a mixer is once again advisable; certainly, you must not add a "backing" by superimposing it on previously recorded material—unless you want to finish up with high quality effects and low quality speech.

Incidentally, I have been assuming all along that we are "with" the character at the near end of the conversation, i.e., that we hear what he hears. If, however, we are merely in the same room with him we can make do with something much simpler for the distorted speech, or even do away with the second voice completely.

One fairly obvious way of just suggesting this effect is to use a real earpiece and pick up its output (together with the normal speech) on the main microphone. It is sometimes possible to get suitable earpieces for a few shillings from "surplus" stores. All you need is a pair of these and a couple of wires to connect them; no amplifiers should be used.

The danger of spill is more serious with this set-up, but if the earpieces are in separate rooms the effect should be satisfactory. Cues can be heard quite clearly over the line, as this simple arrangement works as a microphone and loudspeaker equally well in both directions. (N.B.—The ordinary telephone carbon microphone is not suitable for this sort of use. For one thing, it needs a polarising current, and also—more important—it works only as a transmitter, and not as a receiver.)

If you are thinking of using this arrangement, remember that an earpiece operating as a loudspeaker will have severe volume and frequency limitations, so it should only be attempted where a tiny, shrill sound of low intelligibility is all that is required.

But whatever way you try it, remember that the effect you are after is not necessarily a true representation of telephone quality. What you want is the sound which gives the most effective aural impression.

I've taken this particular case in some details, but there are quite a number of other uses for distortion of this sort: railway station and airport announcements, for example. And when creating these effects in the studio, you may find that a "crackle" background or a touch of echo may help.

Yet another interesting case is that of the radio play (or recording) which includes the effect of a radio announcement (or a tape recorder).

A convenient convention that is frequently adopted is that the reproducer in question produces little better than telephone quality. Essentially, this implies a sort of caricature process—whereby one type of distortion (monophonic reproduction) is having to be represented by another, limitation of frequency range.

But the amateur will generally find that a second tape recorder will do very well for either P.A. or radio announcements. If the tone control is set to minimum bass; and the internal speaker is used with a suitable



Top: The BBC Portable Effects Unit (or "distort box") for providing filtered speech, used for telephone or P.A. quality, etc., in radio plays. Below: Fixing a baffle to the back of a ribbon microphone.

microphone balance, there will usually be sufficient colouration to give pretty effective results.

The techniques described here are, as I have said, those easily and frequently used in BBC studios (with the exception of superimposition, that is). More complex special effects are the responsibility of the BBC Radiophonic Effects Unit. In a field where days can be spent producing only a few minutes of sound, it is best for a small number of people to specialise in this sort of work so that results can be produced efficiently, and relatively quickly. A future article by Desmond Briscoe, Senior Studio Manager of this Unit will describe its work.

In further articles in this series I shall be dealing with some of the general principles involved in moulding the sounds used for various different styles of "treated" music—ranging from *musique concrète* to the "pop" of the popular gramophone record world.



THE TAPE RECORDER IN TRAINING

NEW TAPE CENTRE

FULL demonstration facilities, and a very well-equipped and staffed service department are claimed for the new tape recorder and hi-fi centre recently opened in South London by R. E. W. Earlsfield Limited. The company opened its new recorder show-rooms, seen above, when it was found that this section was out-growing the previous address.

Director M. Murray, describing the entirely new premises as having the finest display in South London, said they cater especially for the tape enthusiast who wishes to change to a better-class machine.

GOOD relations between workers and management are essential in a well-run industry and, to keep the wheels turning smoothly, the industry I serve is careful to train all levels of management in what is called Human Relations. Training courses designed to foster the better understanding of the problems that need to be solved, or better still prevented, between management and workers are an essential part of our regular programme and are conducted on the discussion principle.

The case study is a well-established

method of presenting problems designed to provide practice in solving difficulties, and one interesting and effective way is by a talkie filmstrip. Some years ago, the Industrial Welfare Society produced some excellent filmstrips, with sound accompaniment on discs, and our organization bought some and used them with marked success. The trainees often remarked, however, that the incidents portrayed would have had a greater impact had they been directly related to our own industry. A colleague and I gave thought, therefore, to producing our own filmstrips.

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“Without our tape recorder we should have missed a lot of fun”—says H. CHARLES

IN THIS ARTICLE HE DESCRIBES **HIS EFFORTS TO ADD A SOUND-** **TRACK TO AN INSTRUCTIONAL FILM**

There is always an abundance of good true stories within our industry about the management and mismanagement of labour. It was not difficult to collect a few, and it was at this stage that our tape recorder really became invaluable. We recorded the story, then played it back and listened critically. We found that we could with advantage *re-tell* it to highlight aspects we wanted to bring out. When we had done this to our own satisfaction, we invited criticisms from the training staff who would ultimately be using the filmstrip for group discussion. Eventually we trimmed up the story to meet with their approval.

The next stage in the operation was to break it down into dialogue and commentary with the aid of the recorder, and to build it up visually. We called the photographer into a conference, explained to him the object of the enterprise and played over the recording. A shooting script was made up so that the photographs, with members of our staff as the characters, could be taken with the minimum of disturbance on location. When the photographs were printed we put them in order and played the recording to make sure that sound and picture matched, so that the filmstrip could be produced.

Final recording

Next came the making of the final recording, and at this stage the fun really started. We soon realised that the people who were photogenic were not necessarily “recorder-genic”, and we came to the conclusion that we should have to use a different cast for the sound.

Here we ran into unforeseen difficulties in matching voices to figures; it was useless having a young voice speaking the part of a middle-aged person and it seemed absurd to hear a “light” voice coming from a hefty labourer! The written script sounded stilted, so I told the members of the cast to go away and make up their own lines to fit the situation. Eventually the script sounded natural and convincing.

The question of accents arose and, not having a professional actor among us, we decided to use our own natural voices rather than take the risk of making the thing sound “phony” or overdone; as it turned out, this was entirely satisfactory.

Problems

Another little problem was the grouping round the microphone. At first we used a bi-directional ribbon microphone on a tall stand and stood each side of it, stepping forward to say our lines. The main trouble was that if a speaker stepped too far forward his voice swamped the rest, and, inevitably, we tripped up one another. The script rustled in our hands, so we stuck the pages to cardboard.

After much trial and error we decided to sit round a table with an omni-directional moving coil microphone in the centre, mounted on a sorbo-rubber pad, and this proved very satisfactory.

The signal for the projector operator to change the picture presented another problem. In a professionally-produced sound accompaniment the signal is usually a high-pitched “peep” produced electronically, but we found

this impossible to do with our equipment. After trying all kinds of weird percussion devices, we settled for a well-modulated chime bar.

Extraneous noise worried us at first. Just at the most inconvenient moment a low-flying aircraft or helicopter would make its presence known and, on one occasion, a bumble bee got into the room and insisted on circumnavigating the microphone.

At last, with tight-closed doors, blinds drawn across windows, blankets hung in strategic places, and silence notices displayed on all the approaches to the “studio,” we made our recording. We fluffed a line now and again but, by now, we were so used to dealing with *contretemps* that we were able to wind back and re-record from the last chime without difficulty.

Drastic cuts

We were all set for the premiere but after showing it to our first audience of trainees we realised that it was too long. It lasted twenty minutes, and we found it necessary to repeat the performance so that the group could absorb the whole story. For the next presentation we cut drastically the length of our saga and, by recording and re-recording, we reduced the running time to ten minutes. This was much better: the group got a grip on the problem in one showing and the discussion rapidly got under way. Since then we have made many more talkie filmstrips, some in colour, and, learning from experience, we have kept the running time down to about six minutes, which seems to be about right for an audience to remember the details of the incident portrayed.

The making of the filmstrips and the recordings with our amateur actors has often been amusing and sometimes exhausting, but, all told, an interesting experience. Without the tape recorder our library of case studies could never have been built up and we should have missed a lot of fun.

PETER M. BARDACH

**reports from
America on**

International clubs

UNLIKE most British tape groups, which are local or regional, both in objectives and membership, the clubs with headquarters in America are, for the most part, "international" in scope. This permits exchanges between members separated by continents, and the opportunity to choose from hundreds or in some instances thousands of fellow club members. On the other hand, these large exchange clubs are unable to offer much of the

benefits to be derived from local club participation.

In place of the monthly or more frequent club meetings, a feature of

most British tape groups and regularly reported elsewhere in this magazine, the large tape exchange clubs described in this article issue bulletins or magazines, some printed and some recorded on tape, on a regular or sporadic basis.

All clubs prepare membership rosters, listing recorder data and principal interests. Revisions and additions are generally issued from two to four times each year.

World Tape Pals

*Harry Matthews, Pres., Box 9211,
Dallas, Texas, USA.*

U.K. representative:

*John James, 45, Boundary Road,
Colliers Wood, London, S.W.19, Eng-
land.*

*Annual dues: US and Canada \$5.
Other countries \$3.*

The largest (over 5,000 members) and probably best known of the tape clubs, WTP boasts membership in over fifty nations, and has many standing committees of interest to every type of recording enthusiast. WTP was founded in 1952 as a non-profit educational association, receiving its charter in 1956. That same year, the club affiliated with President Eisenhower's "People-to-People" programme, and is continuing as an active part of the hobbies committees group.

The club slogan, "World Peace is Simply a Matter of Understanding" underscores the WTP belief that taped exchanges between "just folks" of many nations can further greater understanding, peace and tolerance. Two years ago, the Freedoms Foundation award winning song, *Let there be peace on earth, and let it begin with me*, written by WTP members Sy and Jill Miller of Beverly Hills, California, was adopted as the official club song. It should be emphasised, however, that WTP is not political in nature, and neither has nor seeks any direct association with government agencies or groups.

Tape Topics, the bi-monthly club magazine, is distributed free to members. Printed on high quality stock, with photographs and articles from WTP representatives around the world, this is truly a professional quality publication, made possible largely through the co-operation of Mr. Matthews who is a printer by trade.

Permanent committees offering varying services include Welcoming, World Tapes



for Education, Spanish Division, Inter-Americas Committee, Teen Pals Section, Stamp, Tape and slide groups, Sound effects, Police round robin, Writers' Club, Public Relations.

The Education Division, whose services are available to teachers and students everywhere, is operated from the administration building of the Oklahoma City Public School System, under the direction of Robert Brunson. Teachers find that the audio and visual aids supplied on loan often contain material not available through other sources. Branches of WTE are now operating in Japan, Israel, Italy, New Zealand, Australia, Germany and Great Britain.

Organ Music Enthusiasts

*Carl Williams, Secy., 152, Clizbe
Avenue, Amsterdam, N.Y., USA.*

This unique club requires only a love for organ music to belong, although most members do have tape recorders. Its aims are to unite those who have a love for this particular type of music. The club grew from the idea that there were many who enjoyed organ music enough to own organs in their homes . . . collect organ music on tape and disc . . . and were willing to share this music by means of tape exchanges.

The club publishes a directory listing more than 200 members, as well as information regarding organ ownership, type of music preferred, etc.

Members of Organ Music Enthusiasts discuss on tape such matters as organ building, pipe and electronic, stereo and

monaural recording of the organ, and particular organists.

At present, one club aim is to encourage the recording of the rapidly disappearing theatre organ. The club hopes to build a library of theatre organ music.

Voicespondence Club

*Charles E. Owen, Secy., Noel Virginia,
USA.*

U.K. representative:

*Robert Coote, 57, Corelli Road,
London, S.E.3.*

*Annual dues: US and Canada \$3.
Great Britain 15s.*

Voicespondence membership now exceeds 1,400 active tape recordists, and covers 32 different countries. The club maintains an exchange library, sound effects recordings, teenage group, and offers technical assistance to members. This non-profit club, founded in 1953, is an outgrowth of the old Wirespondence Club.

In an effort to personalise the club, "tape-ventions" are held every so often. This is a regional gathering of club members for the purpose of discussing mutual problems and interests relating to tape recording as a hobby and art.

The club magazine is issued to members quarterly, and contains supplements to the membership directory.

A special feature, is the club's Service Committee which lends assistance to handicapped members. This work deals primarily with blind persons, and Voicespondence is proud of its 300 blind memberships. The club magazine, as well as many other publications, are recorded on to tape as an aid to this group.

One of the most heart-warming of the club activities is the "special fund." Member's contributions, a few cents at a time, enable the club to furnish memberships, tapes, and even recorders to persons not otherwise able to afford them.

Club development in America has followed a different pattern to ours. British recording amateurs have chosen the local regional group, meeting personally at regular intervals. The Americans have started a variety of international organisations. Membership of one of these may appeal to many enthusiasts as a complementary activity to local club membership.

Stereo International

O. B. Sloat, Director, 1067, Flatbush Avenue, Brooklyn 26, N.Y., USA.

U.K. representative:

*Roy V. Huddleston, Melton Mowbray Leicestershire, England.
Annual dues: US and Canada \$5. UK £2 sterling.*

O. B. Sloat has succeeded the late Roland Hahn as director of Stereo-International, a club for the advanced recordist. Although membership is open to all, many club members are professional recordists who share the desire of furthering the art of home stereo recording. The club distributes a unique sound roster, issued on tape, and maintains an extensive library of stereo recordings on tape which are available on loan. A number of blind members have found the services of S-I to be of great value.

Currently, the club, total membership about 150, is preparing its first dramatic presentation in stereo. Members in various sections will record the parts assigned. The many recordings will be edited and assembled in Phoenix, Arizona, and finally the complete production will be made available to members.

The club issues to members a quarterly tape bulletin, and like the roster, this is recorded on tape.

The club has pioneered the "stereo round" concept whereby three members record different sections of a tape in round robin fashion with the first member then receiving the tape back containing comments by other members in the triangle.

American Tape Exchange

Cortlandt Parent, Jr., Secy., P.O. Box 324, Shrub Oak, N.Y., USA.

ATE was organised in 1957 by Stuart Crowner, a young high-school student, who was succeeded by Mr. Parent in 1960. At present, there are over 150 active members, mostly in the US, but some representation in Canada, England, Europe, Africa and Australia. ATE stresses that its limited size offers the opportunity for more "personalised" service to members.

The ATE directory of members is published each October, and revisions are issued quarterly. The club newsletter

appears every three months, answering questions on tape recording, and printing members' personal notices . . . a free service.

ATE's "taping network" is a means of making tape contact with many individuals, without starting a regular continuing correspondence. It is designed for a "once exchange" where the member wants to ask another member some question or to secure information. Those belonging to the ATE taping network are assigned special network "call letters."

Amateur Tape Exchange Association

(Formerly Bilingual Recording Club.)

*J. G. Vella, Secy., 1680, Couvrette Street, St. Laurent 9, Canada.
Annual dues: \$3 or ten international reply coupons.*

Although only sixty in number at present, membership is fast expanding, and now includes tape enthusiasts in Canada, USA, England, Columbia, Guatemala, Italy, France and Belgium.

The club magazine, *Decibel*, written in both French and English, is distributed several times each year. ATEA hopes to schedule monthly outdoor recording parties for Canadian members where actuality recording projects are planned. The first was held in March and concerned the sounds in connection with a "sugaring off" party, and the various processes used in producing maple syrup.

The club hopes to produce tapes of local national activities which would be offered for exchange on similar subjects to other clubs.

ATEA has organised a recordist mart, whereby members who wish to swap, sell or exchange items may have their offer printed free in *Decibel*.

Catholic Tape Recorders International

Jerome W. Ciarrocchi, Secy., Box 689, Uniontown, Penna, USA.

U.K. representative:

*George Warren, 47, Princes Avenue, Church End, Finchley, London, N.3, England.
Annual dues: US and Canada \$3.
Other countries: 10s. or ten international reply coupons.*

CTRI was founded in 1957 by Mr. Ciarrocchi, the present secretary, with an initial membership of six. This has now grown to over 200, representing many different countries.

One of the club aims is to promote the field of communication. By this, it is the desire of the CTRI to provide the opportunities for a receiver and a sender to communicate. The club believes that a tape recorder is a "seed" for a future radio station. For example, a missionary in a foreign country begins with a tape recorder to "broadcast" to those living in his area. Eventually, he purchases a ham station, and finally establishes a radio station in the area.

CTRI sends equipment and supplies to foreign missionaries, especially recorded tape for their work in the field of education. Recently, several French tapes were sent to a Sister in Japan.

All club members are listed in the annual roster which is supplemented quarterly along with the newsletter bulletin. Plans for the future include a special library service, with club members supplying recordings on many subjects . . . ranging from bird calls to deep educational and philosophical matters.

Representatives of CTRI are presently located in Australia, Uruguay and South Africa.

AUTHOR'S FOOTNOTE

None of these clubs claim to assume the functions of the local tape groups throughout Britain, whose purposes are quite different.

These clubs are operated largely as non-profit societies, with members contributing time and services. Prospective members should therefore realise that they cannot and should not expect the same depth and speed of service that might be demanded

from a large profit making organisation.

While *Tape Recording Fortnightly* is pleased to present this summary of tape clubs and their activities, readers should not interpret this as specific endorsement.

Further articles on the contents of some of the tapes mentioned above may be included in a future report from America if requests are received to this effect.

MAKING ALL FAIRS PLEASE

I AM very much in favour of Audio Festivals and Fairs and any other events which enable us to see and hear as much as possible of what is going on. I think they are also of great value to manufacturers, especially those who take some trouble to find out something about the thoughts and desires of enthusiasts in general—as distinct from the minority who are always expressing themselves forcibly on aspects that are dear to them personally.

At the Russell Hotel, Pamphonic were issuing a "20 Questions" questionnaire, which should help them to decide a number of matters of production policy. It must have been difficult to decide which questions to ask and which to leave unasked, but I should think a good supplementary question to "Do you consider stereo worth having?" would have been "If not, why not?"

At the very least this extra question would have offered a few clues as to the most popular of the numerous popular fallacies on the subject.

It might, in fact, be a profitable line of investigation if we could discover the most widely-held misconception about stereo so that a concerted effort could be made to dispose of it—to the lasting good of everyone who stands to benefit from the greatest possible vigour in the stereo field, as well as the manufacturers themselves.

I am inclined to think that the prize would go to the notion that "there is only one spot in the room where stereo can be heard." However, I should be happy to have other suggestions.

In spite of my enthusiasm for all these audio events, I invariably come away wishing that a sampling technique could be devised whereby we could hear representative pieces of equipment going through their paces on a strictly limited, highly revealing and absolutely uniform sound programme. This should not be in place of the normal demonstrations using a variety of musical pieces, but it would save some of those long sessions in which the luck of the draw decides whether the item you are particularly interested in is given a useful section of a good recording or only a weak passage of middle range instruments from a re-

ording that may or may not have its own inherent troubles.

There are many ways in which random samples of music can produce unfair comparisons.

It is also difficult to feel well disposed to any instrument when it is playing music that you dislike intensely.

One day we might have a short standard test piece designed to reveal the best and the worst of an instrument. By its use listeners could do some useful preliminary sorting of products and then devote time to studying the finer points of the more promising items.

* * *

IN view of the importance of space-saving units for stereo, it was good to find such top-line people as Tannoy and Leak demonstrating their new small speakers thoroughly and well. I thought they performed very well. The Pamphonic Pillar loudspeaker was also impressive, especially in view of its comparatively low cost.

FOUR TRACK:

The back-room boys are very silent!

AMID all the discussions going on about four-track and two-track I have not seen any comments from the back-room about the extent to which the well-known disadvantages of the narrow track might be cancelled out or masked when it is used for stereo.

For example, it is surely true that drop-out on one track would be masked by the other in many cases. Also the total output from two quarter tracks would not be all that much less than the output from one-half-track monophonic recording; in which case the signal-to-noise problem would remain similar to that we have been accustomed to in half-track mono work.

I shall be happy to have observations on this point from anyone who can produce some facts and figures.

Equipment Under Test

THE STUZZI MANNEQUIN

A TAPE recorder which has such an interesting name as "Mannequin" gives one the expectation that the machine should be attractive in its outward appearance and in its technical details.

This small machine—it is only 13½ x 11 x 6½ inches, certainly lives up to this expectation, particularly in view of its attractive price. The total weight of the machine is only 18 lb., which together with the small size, makes for easy portability.

The machine uses the by now familiar and well-tried B.S.R. "Monardeck," which takes 5½-inch reels. This allows a maximum playing time, at 3½ ips, of up to three hours on one reel of double-play tape. The power consumption is approximately 45 watts from the A.C. mains.

DESCRIPTION

A small pocket on the left of the cabinet provides storage space for the mains lead and microphone provided. This latter item is a crystal type of high impedance, capable of giving very good results. The two input sockets to the machine are also to be found inside this pocket.

The top socket is a low level one for microphone, telephone adaptor or the "diode" connection from a radio receiver. The bottom socket is for the loudspeaker output from a radio receiver, a gramophone pick-up (high impedance type), or another tape recorder. Behind these two sockets are two further sockets for connection to an external loudspeaker.

Equipment Under Test

By **H. Burrell-Hadden**



Looking at the top of the machine, the controls are as follows:—

On the deck unit itself there are two controls, that on the right selects either "fast forward," "fast reverse," or "normal running."

The left hand control is the record/replay switch which is spring-loaded to the replay position, always returning there when the machine is stopped. This procedure prevents accidental erasure of the tape.

On the amplifier panel there are four controls and a magic eye level indicator. The control on the extreme right is the replay tone control which, when the machine is in the record position, acts as the monitoring loudspeaker volume control. Next to this, on its left, is the radio input (high level) volume control

amplifier for playing gramophone records or radio. When used in this way the centre knob controls the volume and the tone control is operable.

When recording, the separate volume control for the monitor loudspeaker output is extremely useful; not only does it enable the monitor volume to be adjusted to a convenient level independently of the record gain control, but it can also be used to cut the loudspeaker completely when recording with a microphone, thereby avoiding howl round.

The amplifier contains three valves plus rectifier and magic eye, the valves being ECC 83, ECL 82, and EL 84, the magic eye is a DM 71. The amplifier is

The replay response was measured using the *Tape Recording Fortnightly* test tape. The results showed that the machine was within ± 6 dB between 80 cps and 10,000 cps.

This machine should, therefore, give a good account of itself when called upon to reproduce tape records.

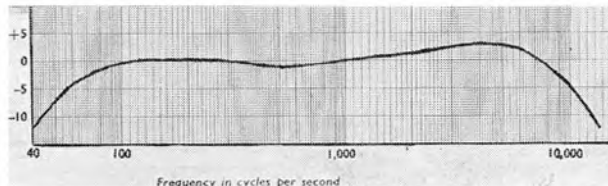
The overall frequency response from input to output through the tape was measured and this too was found to be very satisfactory. The accompanying diagram shows the in/out characteristic and it will be seen that it is only 5dB down at 10,000 cps and 55 cps.

Both these sets of figures were taken with the tone control set to give best results with the pre-recorded test tape.

It will be noticed that the frequency response figures given by the makers do not show any tolerance figures, but the test figures quoted above were good for a machine at this low price. The signal-to-noise ratio was better than 40 dB, a commendable figure, and again this is better than the maker's specification. No figures for wow and flutter were given by the makers but these were found to be at a sufficiently low level for good piano recordings to be made, a severe test.

The general finish of the machine was good, the case being constructed of plywood and covered in an attractive red and gold plastic. The lid is detachable and up to four reels, three carrying tape and one empty, can be carried in the machine. No lead or plugs are provided to enable recordings from pick-up or radio to be made, but these can be obtained from the makers.

I can thoroughly recommend this machine to be a good buy at 27 gns.



The frequency response of the Stuzzi Mannequin

which is part of the input mixing system. To the left again is the microphone socket volume control used when the machine is set to record. This control acts as the tape volume control on the replay part of the mixer system. To the left of this is the magic eye ("exclamation mark" type) and on the left of this again is the superimposition switch.

The on/off switch is associated with the tone control and operation of this starts the tape deck capstan motor. This motor is running all the time the machine is switched on whether or not the tape is in motion.

As already mentioned above in connection with the various controls, the Mannequin has a mixing facility whereby a microphone and say, music from a gramophone, may be mixed together and recorded simultaneously.

This facility is unusual in a machine in this price range and enables a much better "mix" to be obtained than does the superimposition method. However, the superimposition facility is also provided so that speech can be added to a tape already recorded with music.

The mixing facility is also operative on play-back when it is possible to mix a radio or record player output with that of the tape. It is also possible to use the Mannequin as a straight-through

very well constructed and servicing, if necessary, should not be difficult.

The whole assembly of tape deck and amplifier comes away from the case in one piece after removal of the four plastic feet underneath the cabinet. The power output is $2\frac{1}{2}$ watts and the built-in loudspeaker is an 8 x 3-inch elliptical.

TEST REPORT

The usual technical tests were made and in every case the measurements came up to the maker's specification.

Manufacturer's Specification

Size: $13\frac{1}{2}$ x 11 x $6\frac{1}{2}$ inches.

Weight: 18 lb.

Playing time: Up to three hours using double-play tape

Frequency response: 90-10,000 cps.

Output: $2\frac{1}{2}$ watts.

Recording speed: $3\frac{3}{4}$ ips.

Maximum reel size: $5\frac{1}{2}$ inches.

Supply: 220-250 volts AC.

Consumption: 45 watts approx.

Inputs: Microphone, telephone adaptor, pick-up, radio.

Outputs: Extension loudspeaker (3 ohms).

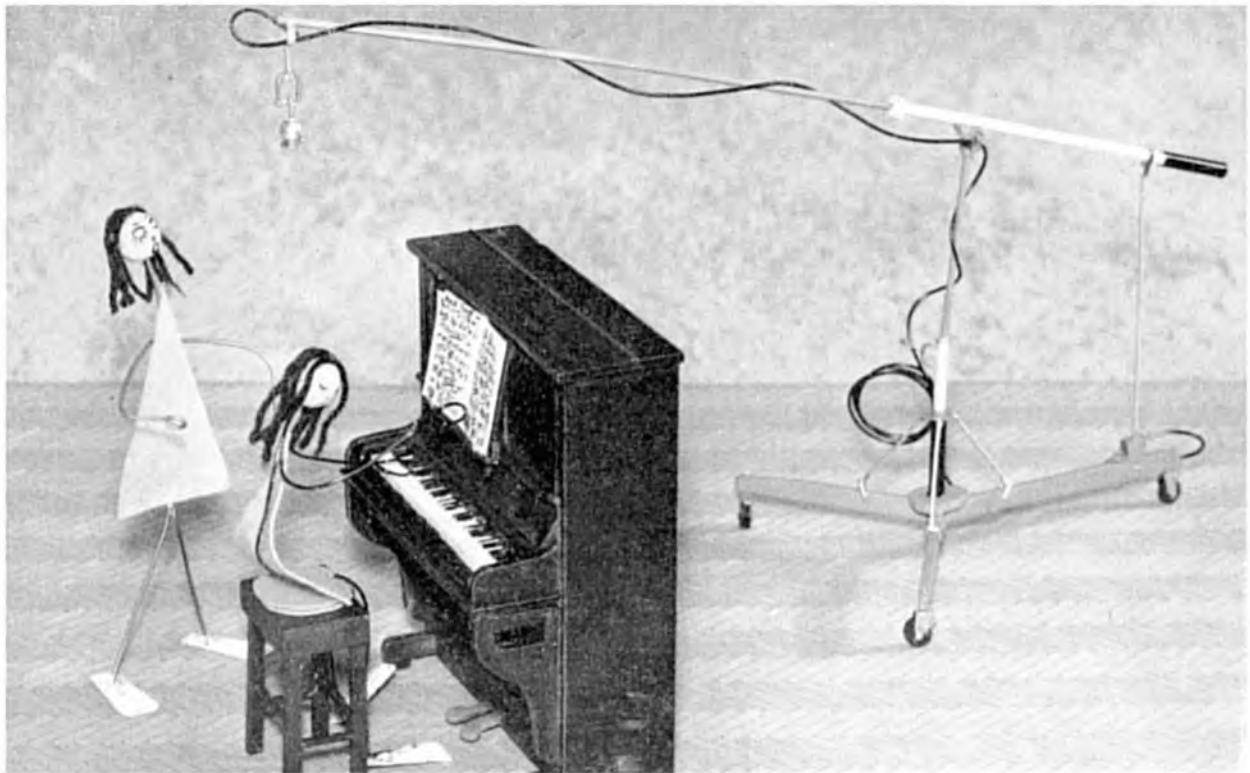
Signal-to-noise ratio: Better than 38 dB.

Bias and erase: 50,000 cps.

Valves: ECC83, ECL82, EL84, EZ81, DM71.

Loudspeaker: Eight-inch elliptical. Complete with microphone, tape and empty spool.

Makers: Recording Devices Ltd., 44, Southern Row, Kensington, London, W.10.



NAOMI ARCHER uses models to describe microphone placing in this series

THE potentialities of a single microphone are worth investigating where the material to be recorded suggests the simple approach. Having once mastered the art of extracting the best results from the minimum of equipment, the amateur will be better able quickly to identify the failings of poor positioning, even when that position only affects the timbre of the recording.

It is a good thing to spend time experimenting on deviations from the text-book optimum position, because liveliness can be introduced to an otherwise dead or dull recording by choosing a proper balance between the direct and reflected sound. This kind of liveliness can be described as reverberation.

Alternatively, a dead recording may have reverberation added, either by means of the misnamed "echo chamber," or by electronic circuits; the advantage being that the correct reverberation is selected without involving the readjustment of the artists or acoustics.

These demonstrations to oneself will certainly accelerate an adeptness at controlling multiple microphones and balance, which experience is essential before the recordist can even approach the designation of "recording artist."

Part Five: Use of a single microphone

The illustration shows how a microphone can be suspended in order to obtain a high proportion of direct pick up from the vocalist. Notice how simple it is for the score to be seen in the direction of the microphone, and by retracting the cross-arm a little more towards the piano, it would be possible to pick up a second vocal contribution from the pianist.

This combination of subjects is most difficult to record with one microphone, since it demands an understanding by the artists of the correct balance required of their voices and the piano for the recording. Furthermore, if the sheet music is to be shared during an impromptu performance an audience could be quickly irritated by an obscuring microphone.

More information can be gleaned from the above picture—the piano lid is better left closed for an accompaniment of this nature. Of course, the temptation to stand a microphone on the top must be avoided; the poor results would waste everyone's time.

The omni-directional type microphone is modelled here, for its advantage is that it is uniformly sensitive in all directions. It allows for a good overall sound, slight turns off axis, reverberation pick-up, and applause from the audience. It also overcomes the possibility of intensifying odd sounds that could be picked up by a directional microphone when the source is off axis. Sometimes, though, the live microphone might be more difficult to control in lively surroundings.

Where the artists are to be found performing apart on the stage, then the question of using one microphone needs reviewing. If the vocalist were to have the microphone, the accompaniment would sound removed; the reverberation would become an enemy rather than an ally. This brings us back to the first article in this series, on the use of two microphones for a similar production.

A development of the single microphone technique mentioned is where there are a dozen or so singers grouped round the piano. Take, for example, a class of school-children, whose heights may vary from keyboard to piano top, gathered round their music teacher. The teacher should be able to pick out individual voices on the playback of a good recording.

The amateur recordist should not be discouraged if he is not able to make quite as good a job as the studio or mobile recording engineer. Some of the really ambitious attempts will take more time, patience, and equipment to master. In the amateur performance world, very real problems exist. Generally, less time is spent on rehearsals and the enthusiast is expected to make a good recording of people who are not dependent on their performing abilities for their bread and butter; there are those who are less proficient at voice control, and their co-operation is often lacking when compared with the artists whose living and reputation may depend on the results of the recording.

Getting Value for Money!

BY DAVID LAZELL

ASK most people how they imagine a tape-recording enthusiast, and they will probably describe a wild-eyed, knowledgeable intellectual, who mutters technical data into his reluctant beard whenever he catches sight of a machine. In fact, few of the growing number of tape enthusiasts know very much about the incantations of the well-groomed salesman; to them, "wow," like a "tweeter," describes the sounds made by the new baby in the wee, small hours of the morning.

Thus, since we are often humble men, seeking only the satisfaction of racing cars in stereo in the lounge, the erstwhile but unknowing recruit to hi-fi and tape may well be taken for a metaphorical ride! In other words, some manufacturers and retailers are ready to take advantage of the consumers' lack of knowledge about electronic and electrical equipment.

Letters in a recent issue of *Tape Recording Fortnightly* included one calling for a club to protect the interests of the recorder owner and another calling attention to misleading displays of "sale" models. Recently, I saw in a store display, a machine which, according to the display card, had been reduced from 50 guineas. On checking with the current *Tape Recording Year Book*, I confirmed that the machine's price was really 39 guineas.

Of course, this kind of fake sale price is no new characteristic of unfair trading, and has been widely condemned in many trades in the United States of America. Unknowing consumers are persuaded to buy products because of the savings which they anticipate; but such saving does not exist outside the imagination of the salesman!

Where tape recording enthusiasts discover this misleading advertising, it might be a good idea to draw the attention of the manufacturer concerned to it—and, where sufficient courage can be summoned, to tell the store proprietor that you believe his statement to be false! On some occasions, the store may appreciate your well-meant reminder of the true "recommended retail price."

The practice of retail price maintenance has, to some extent, safeguarded consumers' interests, insofar as dishonest salesmen find it rather difficult to sell a machine above the price advertised by



"Really, we wanted one that a child couldn't operate . . ."

the manufacturer. Sometimes, sharp salesmen overcharge through hire purchase agreements, by adding high interest rates to the cost of the machine—a practice not confined to the sale of tape recorders!

Perhaps the best advice that can be given to prospective purchasers of tape recorders is that they should look at the tape recording magazines, going through the advertisements fairly carefully. Many dealers advertising in these magazines offer better terms—both for hire purchase sales and for after-sales service—than local retailers.

Complaints of poor repair services have been reported in the tape recording journals from time to time, and it is here that most help for the consumer appears to be required. Manufacturers should ensure that their local agents are equipped sufficiently to carry out the usual repairs on machines, and guarantees on tape recorders—as on many other goods—ought to be legally binding on the manufacturers for a reasonable time, say six months or so.

Most tape recorder producers are eager to retain their good name, of course, but where indifferent service is encountered, publicity should be given to it. Publicity is a good policeman! Inefficiency of manufacturers may be created by over-worked or incapable office staff; managing directors do not want to see sales figures decline through poor after-sales service.

Before purchasing a recorder, consumers should find out what kind of guarantee and after-sales service is offered. If purchasers were more vigilant, cases like those indicated by disappointed tape enthusiasts would be less likely. Potential purchasers should also refer to the reviews of machines printed in the tape journals, and, where a purchased machine does not match the review, investigations should be made.

Consumers' Association, publishers of *Which?*, have just focused considerable attention on the whole subject by their first report on tape recorders. For some time, the monthly *Consumer Reports*, issued by the American Consumers' Union, has been reviewing high fidelity equipment—tape recorders, stereo equipment, pick-up arms and turntables.

It is likely that the British consumers' magazines will be increasingly concerned with "leisure time" equipment. The Consumer Advisory Council, associate membership of which can be obtained for 10s. a year—investigates complaints about goods and services submitted to them.

So it does look as though consumers can help themselves considerably. In the meantime, one wishes good luck to the Secretary of Acton Tape Recording Club in his attempt to sponsor a club to protect the interests of the recorder-owner (and, one presumes, the potential recorder owner!).

"BABY" GRAMPIAN

AMONG the new equipment shown by Gramplan at the recent Festival is the DP5 (illustrated below) described as the baby brother of the established DP4.

It employs a moving coil unit similar to that used in the DP4, and has a case only 2½ in. long with the cable connectors attached to the side. The only operational difference is that the smaller model has a more rapid fall-off at the lower end of the frequency range.



The Gramplan DP5

Prices are: DP5 (low impedance) £7 11s.; DP5/X, DP5/M and DP5/H (high impedances) £8 11s.

Gramplan Reproducers Limited, Hanworth Trading Estate, Feltham, Middlesex.

That 12½ guinea recorder

IN our last issue we published a brief announcement of a new 12½ guinea recorder, the Japanese-manufactured Apollec Model RA11.

This must be one of the cheapest recorders available, and although not having the fidelity of the previous Japanese recorders currently on the market, will suit the pockets of many enthusiasts requiring a speech recording machine for interviews, etc.

It weighs only 2½ lb., including batteries and microphone, and measures 8¼ x 6 x 2¼ in. The frequency response is roughly within the range 500-5,000 cps. and wow and flutter is rated at about 3-5 per cent. A single speed of 3¾ ips is used. This is governed by the take-up spool, and is therefore limited in use with standard machines.

Two batteries are incorporated, 1½V for the motor, and 9V for the transistors (Lasky Radios have modified the machine to incorporate a second 1½V battery). Three transistors are employed, one 2N217 and two 2N215, both of American origin.

The microphone, with a face diameter roughly the size of a penny, is a high impedance (5 Kohms) crystal type with lapel clip. Low impedance (10 ohms) monitoring earphones are also supplied.

J. & M. Stone & Civic, 66/68 Upper Richmond Road, S.W.15.

New Products

MINIATURE RECORDER ANNOUNCED BY CLARION

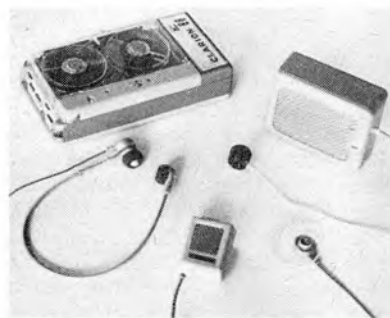
A NEW miniature transistorised tape recorder, small enough to fit into a coat-pocket or handbag, capable of working in literally any position and yet having the versatility in operation of many a larger machine, has been introduced by G.B.C. Electronic Industries Ltd.

Known as the Clarion 88, this new "baby" weighs only three pounds—even when loaded with batteries—and measures 7½ x 4½ x 1½ in. Push-button controls are conveniently grouped at one end for positive, finger-tip operation and the governed speed of 1½ ips gives a playing time of 1½ hours.

The Clarion 88 will run for approximately 30 hours on its three U.11 and three U.12 batteries. A mains converter allows the machine to be run off the mains supply when required.

Tapes made on the Clarion 88 can be played back on any other machine having a tape speed of 1½ ips by using the adaptor supplied free with each machine. This adaptor is necessary because the spools for the "88" are specially made so that they will not slip off their spindles even if the machine is held upside down. A safety interlock is incorporated to prevent accidental erasing.

For office dictation purposes, a set of light-weight earphones and a stop/start foot is supplied. A telephone adaptor is available making it possible to record both sides of a telephone conversation.



The Clarion 88 and accessories

The compactness of this instrument enables it to be safely and unobtrusively stowed away in a pocket or handbag, allowing the enthusiast to make candid recordings anywhere, controlling the machine by the remote control on/off switch on the microphone. For completely candid recordings, a tiny lapel microphone is available as an optional extra. Recordings can be played back through the audiophone earpiece supplied, although an amplified speaker, containing its own batteries, is available.

The price of the Clarion 88, including audiophone, tape and spool adaptor, is 39 guineas.

G.B.C. Electronic Industries, Ltd., 121, Edgware Road, London, W.1.

RECORDER AND SPLICER FROM NEWCOMER

TWO new pieces of equipment recently introduced by a firm which is a newcomer to the tape market is the Transcorder TR100, portable tape recorder, and the Bond Tape splicer.

Two speeds, 3¾ and 1½, are incorporated on the TR100, a miniature unit introduced by Cine Accessories (Brighton) Limited.

Using standard 3 in. reels, this completely transistorised machine can provide a maximum playing time of just over an hour on double-play tape at the slowest speed.

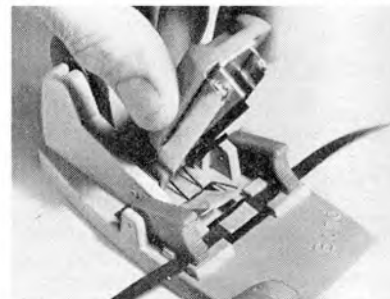
It measures 7 x 7 x 1½ in., and weighs only 4 lb. Six transistors, including two power units, and two diodes are used, and power for rewind is provided. Battery life meter and a recording level indicator are included in the TR100 which retails at 39 guineas, and is described as suitable for speech recording.

A number of accessories are available, including carrying case (£1 19s. 6d.); microphone (£2 19s. 6d.); earphones (£1 5s.); and telephone pick-up (19s. 6d.). A 240V AC adaptor is also available at £5 19s. 6d.

The tape splicer is another in the familiar trend of the current splicers which considerably reduce the problem of tape editing. This unit goes one step further than many of those now on the

market, for the complete job can now be effected with the minimum of effort.

First of all it cuts the tape at the position desired, then, with one further depression of the clamp, it presses the joining tape, fed from an incorporated dispenser, on to the edited tape and at the same time trims the tape edges with a slight "bow" cut. This latter facility



The Bond Tape-splicer

prevents the join of the tape from catching in tape guides or reels.

Replaceable cutter cartridges and 150 in. of ½ in. wide jointing tape are included in the price of 32s. 6d.

Cine Accessories (Brighton) Ltd., 15, Bond Street, Brighton, Sussex.

BRENELL INTRODUCE RESTYLED MK5

40-20,000 cps \pm 2dB

THE latest of the impressive machines manufactured by Brenell made its bow at the Audio Fair. The new machine is a completely restyled version of their Mk 5 and is designated the Mk 5 Type "M." It sells at 88 guineas, and incorporates four speeds—1 $\frac{1}{2}$ to 15 ips.

Claimed frequency responses are as follows, with the lowest figure being 40 cps in each case. Up to 20,000 cps \pm 2dB at 15 ips; 18,000 cps \pm 3dB at 7 $\frac{1}{2}$ ips; 13,000 cps \pm 3dB at 3 $\frac{1}{2}$; and up to 7,000 cps \pm 3dB at 1 $\frac{1}{2}$ ips. The amplifier response is given as 40—40,000 cps \pm 2dB.

The Type "M" retains all the outstanding features of the Mk 5, and also incorporates superimposing and mixing facilities, recording level meter, and adjustable rotary tape guide.

Equally impressive are the wow and flutter figures which are given as less than 0.5 per cent at 15 ips; less than 0.1 per cent at 7 $\frac{1}{2}$ ips; less than 0.15 at 3 $\frac{1}{2}$ ips; and less than 0.25 at 1 $\frac{1}{2}$ ips. These figures are for record/replay, and not replay only.

Maximum spool size is the same as for the earlier model, 8 $\frac{1}{4}$ in., providing a total playing time of 4 $\frac{1}{4}$ hours per track

Right: The new
Brenell Mk 5
Type "M" four-
speed recorder



at the slowest speed using double-play tape. Rewind time is given as 45 seconds for 1,200 ft. of tape.

Separate record and replay heads are incorporated, and the Type "M" has separate record and replay amplifiers. Output is rated at 2 $\frac{1}{2}$ watts (RMS).

It weighs 45 lb., and measures 18x17x9 inches.

Additional facilities include monitoring through headphones, and pause control, and there is a four-position frequency correction switch.

Brenell Engineering Co. Ltd., 1a, Doughty Street, London, W.C.1.

Saga Tape Records

A NEW system of distribution of the tape records issued by Saga Records has been agreed between that company and Minnesota Mining & Manufacturing Co. Ltd., manufacturers of Scotch Brand tape.

As from April 1, the 3M company represents Saga records in the UK, thereby providing their tremendous selling organisation behind the Saga issues.

Saga records will continue to distribute their tapes through their normal record retailers, while 3M will concentrate on their blank tape and tape recorder outlets.

Tape record sales in England are beginning to show impressive increases, and it is felt that this new marketing arrangement will ensure that Saga will be the dominant name in tape records in England.

Their latest record catalogue has recently been received in this office, and we hope in the very near future to be able to restart our successful series of reviews of tape records.

Saga Records, 127, Kensal Road, London, W.10.

than 100 mV. It may also be used to add a second "stereo" channel to existing mono tape equipment. The price is £7 16s.

Wellington Acoustic Laboratories Ltd., Farnham, Surrey.

ACCESSORIES BY WAL

YET another accessory in their range of such items for the tape user has been announced by Wellington Acoustic Laboratories.

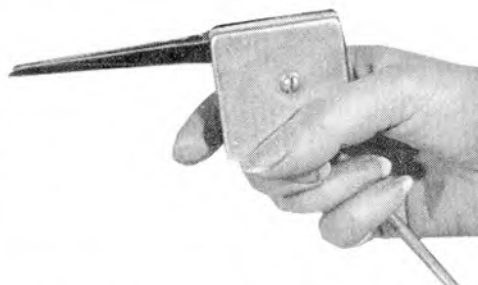
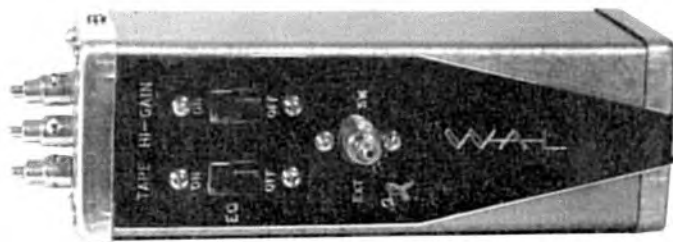
This is the WAL D-MAG, a mains-operated, pocket-size head demagnetiser that provides a complete degaussing circuit. It is a recognised fact that heads become magnetised to the detriment of their performance, resulting in increased back ground noise, tape hiss, etc.

To remove these unwanted sounds, head demagnetisation is essential, and the WAL D-MAG is designed so that the concentrated demagnetising field can be applied directly across the gap, completely demagnetising the head in a matter of seconds.

The new instrument also has another

very worthwhile function, helping solve many of the problems of tape editing by erasing unwanted sounds and passages on the tape. This is achieved by bringing the unit into close contact with the tape at the section desired to be erased. A tricky task, which cannot always be achieved by normal erasure methods. The unit sells at £2 10s.

A modified version of their established stereo WAL GAIN pre-amplifier is also announced. The new version, called the Hi-Gain, is again fully transistorised, battery-operated, with tape equalisation. For use when monitoring or for dubbing with a second deck, it provides sufficient equalised CCIR voltage to directly couple to a pair of headphones, or to a hi-fi amplifier with sensitivity of not less



The two new Wellington accessories described above. The HI-GAIN (left) and the WAL D-MAG

A high-grade ribbon microphone for less than two guineas

By

BILL RAWLE

SPECIAL UNCENSORED REPORT

BEFORE I come to the subject of the ribbon microphone, I have a short report on a recent meeting of the Bindwell Tape Recording Club. The Club were fortunate to have the use of the Corn Exchange—nobody swaps corn at Bindwell on Saturday afternoons.

There was hesitation about holding club meetings at the Corn Exchange. "We are leaving ourselves open," was the general opinion. But the first meeting was a huge success, mainly due to a tape played by the secretary, Will Boreham (whose experience of tape recording winds back to 1958), giving a positively hilarious account of how his mother-in-law tripped over a bucket and fell down two flights of stairs.

All the members are married, some with little ones, others with the big, rack-mounted jobs taking 10-inch reels.

Wives are permitted to meetings, but none have attended so far.

One member said, "I think they don't attend because they feel we should spend our money on luxuries, such as eating-plates, sitting-chairs, and so forth. They're a spendthrift lot, y'know. . . ."

Another member commented, "The mechanical action of my tape recorder always suggests a spin dryer to my wife. I wish they wouldn't make these expensive gadgets for women—I have a guilt complex every time I switch on."

Henry Breedin played a tape on which he had recorded his eleven children.

There was plenty of interesting dialogue, such as:—

"What's your name? . . . go on, tell us what your name is . . . say what your name is for Daddy . . . you're a bit shy, aren't you? . . . what's your name? . . . aren't you going to tell us your name? . . . say something . . . speak! . . . say something! . . . say something, you revolting little? ? ! ! or I'll ram this ? ? ! ! microphone down your ? ? ! ! throat."



A guest was introduced, Mr. Rasp, of Arsche Sound Ltd., who had come to demonstrate their new "Bike-Deck." This is an outfit which converts a bicycle into a tape recorder.

The wheels are removed and replaced by 7-inch reels. The heads are located on the cross-bar. The tape is guided from the front wheel (or spool), up the frame, along the cross-bar, through the heads, and down the other side to the back wheel (or spool).

The makers of the "Bike-Deck" recommend a fixed wheel model, to facilitate winding on and back, which is effected by turning the pedals. The caliper brakes were very efficient and gave instant stop.

Mr. Rasp said cycling clubs were interested in this device. Later there was hot discussion as to whether the local cycling club should join the tape recording club, or vice versa. One member grumbled, "If I have to come to meetings in shorts, I quit."

A member made an extravagant claim about recording 3,600 "Pops" on one 3-inch reel of tape. Disbelief turned to ribald laughter when he played his recording of an outboard motor.

He was rebuked by the secretary, who reminded the meeting that tape recording is a serious business.

"So it ought to be," murmured someone, "at fifty bob a reel."

Mike Howle attended the meeting to demonstrate the Ellish Tape Recorder, a rack-mounted portable. Ellish Recorders are an old-established company which commenced making recorders in 1958, when nobody was looking.

An important feature of this Ellish

machine is that it gets hot after running for an hour. Very hot. The makers have made a sales point of this and emphasise in their advertisements that if you purchase an Ellish machine you get two things for the price of one—a tape recorder and a convector heater.

After two hours it is possible to fry an egg on the deck, but the makers, in their usual modest way, are not making any claims about eggs, or bacon for that matter, and are content to state that with the lid open it has an output of 2,800 B.T.U.s per hour, equal to about 1½ kilowatts, sufficient to provide a comfortable temperature in a normal-size room.

A wire frame is available at extra cost. It fits over the recorder and converts it to a clothes dryer.

Mike's demonstration of the machine was rather disappointing. There was a bit of grit in the magic eye. After removing it with the corner of a handkerchief, some improvement was noticeable.

The concensus of opinion was that this is a machine which is as good as an inferior tape recorder costing two or three times the price.



Summing up, the Bindwell is a very go-ahead club. Every one of the members is on his toes. This makes their legs ache, but they don't seem to care.

They have kindly invited me to their next meeting. Unfortunately, on that date I have to be at a ceremony to launch a new tape recorder called the "Fleet," originally made to Admiralty specification.

The deck is very small: only a quarter the size of that fitted to a standard tape recorder.

On the quarter deck is a handle which is pushed or pulled to select the required speed. There are two speeds—Full Ahead and Slow Astern.

But enough! The technical editor is off to Spithead next week to review the "Fleet" and a full report will appear sooner or later.

Eh? What's that? Ribbon microphone? Ah, yes. I'm in the market for a High Grade Ribbon Microphone. Not more than £2.



News from the Clubs

ONE of the most useful and interesting ideas to come from a tape club for some while recently reached my desk. The idea is to issue to local dealers a free demonstration tape outlining to new tape recorder owners the value of joining a tape club. The move has been made by the **London** club, and the tape is now in production under the capable hands of Roger Aslin.

The idea followed a recent feeling of apathy among the club members who felt the club was "drifting along with no sense of purpose"—a thought perhaps not unfamiliar to many clubs. To combat this state of "weightlessness," the club committee sat down to do some serious thinking, and their demonstration tape plan was just one of the ideas that popped up. Others include a greater effort to produce documentary tapes with the emphasis on outdoor recording, and a special effort to complete their entry for the **British Amateur Tape Recording Contest**.

I believe their proposed tape will do much to overcome their present problem, as it serves the two-fold purpose of the chance to increase membership, and provide the opportunity to tackle another feature tape. Many clubs could do worse than take note of the plan. I would like to hear of any similar tapes that are produced.

Soon after discussing their future plans the members set to to put words into action, and at the March 9 meeting their contest entry was discussed at great length. A competition had been arranged to choose an idea for their tape, and Terry Devereux's seemed to be the most promising. At the following meeting, March 23, Mr. Devereux arrived with four scripts hastily knocked together and casting for the play began. More discussion followed, this time to organise the collection of the required sound effects.

The former feeling of apathy received quite a knock on the head when at the April 13 meeting Michael Avel nudged the members from their mood with a demonstration of tape and slides. He had visited Italy last year and presented a show entitled "... and so to Venice." Roger Aslin also starred at the meeting with a talk on amps and pre-amps. He was to hold the floor again at the April 27 meeting when his subject was to be "Types of Speakers." His comparative talk was to be preceded by a talk on circuit reading, lay-outs, and demonstra-

tions of soldering to be presented by Alan Pierce.

Demonstrations of editing and dubbing and recorder maintenance has been outlined for the May 11 meeting, and the following meetings have been arranged thus. Microphones (May 25); Field recording (June 8); and mixing and matching (June 22). Seems they have swiftly surmounted their earlier problems.

One of two competitions recently run by the **Enfield** club was judged by Mrs. Sheila Wakeley, secretary of the **Ware** club, who visited Enfield with some members of her own club. A second judge was a member of the **Walthamstow** club.

Tapes dealing with the subject of "milk" were submitted by members, and Miss Pat Allbutt's five-minute humorous story "From the cow to the milkman" won for her the first prize of two reels of tape.

The second contest comprised the collection of ten sound effects, which other members were to recognise. Chairman Don Hughes scored most points.

Members killed two birds with one stone when they recently devoted two evenings to tape recorder maintenance with special emphasis on cleaning machines. I wonder if any artful member remembered the story of the vacuum salesman who stumbled on a housewife in the middle of her spring-cleaning. "Show me again how to clean heads... use the erase head this time!"

Demonstrations and talks have also been given and at one of their April meetings Mr. Hughes described microphones, amplifiers and loudspeakers. He illustrated his talk with diagrams and gave a clear lecture for many of the layman members.

Mr. Richard Collinson, the club's secretary, attended the Rose Bruford tape course, described elsewhere in this issue, and gave a brief survey of do's and don'ts and many other hints at a special meeting late last month.

During the past few months, and particularly while the tape course was still in progress, the **Warwick and Leamington** club has welcomed many strangers to its meetings.

The course finished on April 5, after a series of refreshing sessions designed to give the newcomer an idea of the value of tape and the devoted enthusiast a chance to broaden his technical capabilities.

A comprehensive study of tape manipulation and the effects to be achieved by this process was provided by Treasurer Terry Draper at the March 1 meeting. Using two Philips' machines, he demonstrated the construction of musique concrete and gave practical examples of achieving echo using a loop tape.

On March 15 Chairman Ken Wilkins led the evening's studies with practical examples of tape editing and splicing. Transposing words in a recorded sentence was only one of the highly enter-

taining demonstrations he provided, although we have no record of his editing in dropped H's.

He continued by showing some 8 mm. cine film which he had stripe-recorded with sound on his Circesound projector. This demonstration gave one of the technical members the idea of incorporating record and playback heads on to his projector and attempting to record directly on to the stripe. His success, if any, has not yet been reported.

At the following meeting, Trevor Gilbert, vice-chairman, gave a stereo demonstration on equipment he had built himself. Of particular interest to those attending the course was a stereo tape he had recorded at a Christmas pantomime. Short extracts of tape recorded "in the field" on a Fi-Cord followed, and the members were as equally impressed by its performance as they were of many of the mains machines on show.

During May, members hope to have equipment demonstrated by E.M.I. Ltd. and Philips Ltd. At the next meeting, scheduled for May 3, Miss Eileen Jones will report her impressions on the Rose Bruford course which she attended. In her latest letter, the publicity official described the six-day course as "a week I shall never forget," and expressed her thanks to everyone concerned for making the course so successful.

As briefly mentioned in our last issue, the March 16 meeting of the **Coventry** club included a talk on English Canals and Waterways.

Far removed from the normal subject of tape recording one may be entitled to think. And so it would seem did the members themselves. For on arrival at the club rooms, the lecturer's first request was for a machine. And not a recorder was present. Ron Longmore quickly came to the rescue, and beat a hasty retreat to his home to collect his Philips machine.

Once under way the lecture proved quite entertaining and Mr. Dunkerley, who delivered the talk, came up with some unusual facts concerning our waterways. He presented a number of slides illustrating how the problem of bypassing canal bridges was overcome. In some cases instead of untying the horse and recoupling beast and barge once past the bridge, special systems had been devised. These included a bridge that is not joined in the middle, and one, the description of which leaves me as confused as it appears to have left the secretary of the tape club.

He described it as "a sort of twisted path around the bridge," and adds that he "did not quite appreciate how this worked, but presumes that it must..."

One of the tapes to have been demonstrated during a later meeting came under the suspicious eyes of the committee.

The tape in question had been received by post along with a letter requesting it be played before the members. With a number of practical jokers abroad in the area, it was decided to postpone playback until the committee had been able to vet the problem tape.

One cannot be too careful in this respect they must think. And neither can one be too careful in recording, and Tom Bagley once more had this brought to mind when he attempted a recording for Keith Longmore. Mr. Bagley spent some time at Coventry station recently collect-

(Continued on page 33)

Classified advertisements

Rate—Sixpence per word (minimum 5s.); Trade, ninepence per word (minimum 10s.); box numbers, one shilling extra. Payment with copy. Copy should be sent to Advertisement Department, "Tape Recording Fortnightly," 1, Crane Court, Fleet Street, London, E.C.4.

SERVICES

Tape recorder need repairing? Then let London's Largest Tape Recorder Specialists do it for you, expertly and economically. Essex Tape Recorder Centre, 2, Maryland Point Station, Stratford, E.15.

FERROGRAPH 4 A/N's-808's, VORTEXION WVA, WV.B, SIMON SP4, REFLECTOGRAPH A-B, etc., always in stock and ready for immediate delivery, as well as over 200 latest 1960 recorders at London's Largest Tape Recorder Specialists. The best, lowest H.P. terms, and finest selection of new and s/h recorders, from £18. Generous P/E allowances. Essex Tape Recorder Centres, 2, Maryland Point Station, Stratford, E.15, and 205, High Street North, East Ham, E.6.

GRUNDIG sales/service in your area: High Wycombe phone 457, Newbury phone Thatcham 3327, Wallingford phone 3083, Orpington, Kent, phone Orpington 23816, New Malden phone Malden 6448, Watford phone Garston 3367.

TAPE EXCHANGES

TAPE recorder owners who would like to make contact with others of similar interests to exchange news and views by tape are invited to send their name, address, sex, age and special hobby or interest (but only one, please) for this special new section.

It will be assumed that all tape contacts will be made using a speed of 3½ ips, on half-track tape. If space permits, additional speeds, or track usage will be published. Maximum spool size only is given.

Bardell, Linda (14). 3-6, Rilstone Road, Quinton, Birmingham. 32. Popular music and languages—especially French and German. 1½, 3½, 7½ ips. 7-in. spools.
Baxter, Gregory. 7, Queen Street, Waterloo, Liverpool 22. Classical music. 7½, 15 ips. 8½-in. spools.
Brunskill, Harry. 20, Providence Terrace, Thornton, Near Bradford, Yorkshire. Ex-comedian B.E.S.A./ENSA would like to contact old pals on tape. 3-in. spools.
Carter, B. (Male, 27). 13, Greenfields, Upton, Chester, Cheshire. General interests. 3½ ips. 3-in. spools only.
Cox, Ian (21). The Bungalow, Welcome Hill, Kings Langley, Herts. General interests. 3½ ips. 5½-in. spool.
Fildhouse, Tom. 524, Stanningley Road, Stanningley, Pudsey, Yorkshire. Writing and recording short stories.
Francis F. (Miss, 26). 111, Breakspere Road, Brockley, London, S.E.4. Sport and theatre. Prefers 3-in. reel exchanges.
Fung, I. J. (Male, 27). 119, Tooting Bee Road, London, S.W.17. Classical music, particularly interested in exchanging "off-the-air" recordings

Something to sell?—equipment for exchange?—looking for a job in the hi-fi tape field?—seeking a tape contact abroad?—tape-to-disc services to offer?—expert staff needed? A classified advertisement in *Tape Recording Fortnightly* will bring you quick results—cheaply.

MISCELLANEOUS

Do you use the telephone? If so you will find a Dektron Telecon the most useful of all your recording accessories. The Telecon is not just a novelty but a unit which you will use frequently for both family and business purposes. You will be surprised by its efficiency. Just stand it behind the phone (no connection is necessary) and both sides of the conversation can be recorded, or, if you wish, amplified and broadcast to listeners in the room. The price—only 27s. 6d. post free. To ensure delivery by return post write today to Dektron, 2, Westbourne Road, Weymouth.

PRE-RECORDED TAPES

Unique 40-page catalogue listing all makes, Mono, Stereo, 7½ and 3½ ips. Send 2s. 6d., refundable on first tape record purchased. Dept. 6, Teletape Ltd., 33, Edgware Road, W.2. PAD 1942.

FRIENDLY FOLK ASSOCIATION, 87, Terrace, Torquay. Leading International Correspondence Hobby Club since 1943. Now included, facilities for Tapesponding. Details free.

of UK and USA concerts. 8½-in. spool. 3½ and 7½ ips.
Grimmond, Edward A. M. (33). 29, Abbey Court, Upper Park Road, Camberley, Surrey. Photography. Contacts in France particularly welcome. Prefers 3-in. spools.
Hannah, Arthur A. 17, Blundell Street, Blackpool, Lancs. Do-it-yourself. 7-in. spool, 7½ and 1½ ips.
Hart, Kenneth (38). 2, The Greenway, Rickmansworth, Herts. Technical side of tape recording.
Haynes, James (37). 18, Torre Mount, Leeds 9, Yorkshire. Popular music and photography. Female contacts wanted—letters first please.
Howse, John (46). 27, Blenkarne Road, London, S.W.11. General interests.
Iredale, J. D. (Male—32). 9, Ingfield Avenue, Dalton, Huddersfield, Motoring. 1½ ips.
James, Tony (23). 8, Tintagel Crescent, East Dulwich, London, S.E.22. English speaking Cantonese contacts wanted. 15, 7½ and 3½ ips. 7-in. spools.
Jones, Richard LI. (27). 71, Penrhos Avenue, Llandudno Junction, N. Wales. Pop music. 5½-in. spool, 1½ ips.
Judd, W. A. (Male, 48). 1, Jeremy Drive, Sheldon, Solihull, Warks. General interests. 3½ ips. 3-in. spools (tapes only).
Kidman, Michael R. (31). 11, Crown Road, Muswell Hill, London, N.10. Irish Ceili music. Prefers 3-in. reel exchanges.
Lingwood, Tom (28). 19, Belsize Park, London, N.W.3. Opera. 2- or 4-track.
Lowsley, Robert S. (39). 78, Gladstone Street, Loughborough, Leicestershire. Tape play productions. 7½ and 1½ ips.
Miller, Kenneth (53). 1500, Grand Concourse, New York 57, New York, USA. Active use of battery portables.
McEwan, Leslie J. (24). 76, Gourlay Street, Glasgow, N.1. Colour photography. 3½ ips. 3-in. spools.
Morris, Ken (40). 50, St. Andrew's Crescent, Rugby. Spanish and Latin-American music. 5½-in. spool.
Rae, Michael B. (19). 5, Millers Terrace, Dalton, London, E.8. Wishes to contact overseas enthusiasts—especially Germany. 3½ ips. 3½-in. spools.
Scott, G. (Male, 33). 151, Sibley Road, Barrow-on-Soar, Leicestershire. Motoring. 3½ ips. 5½-in. spools.
Seaden, Edwin (36). 11, Hereward Road, Tooting, London, S.W.17. Country and western music.

MISCELLANEOUS

WAL GAIN transistorised pre-amplifiers. Many applications, extra gain for Mics, Tape Heads, P-U's, etc. Mono version, £5. Stereo, £7 10s. **WAL BULK TAPE ERASER**, both tracks 8-in. reel erased 30 sec., £7 18s. 6d. **WALTRAK** transistorised oscillator, 1,000cps, indispensable for Service, £6 10s. Full technical literature sent, supplied through all leading dealers. Wellington Acoustic Laboratories Ltd., TRC Dept., Farnham, Surrey.

TAPE PROTECTORS—Top-quality shaped polythene bags with generous closure—protect your tapes from damp and atmospheric change and prevent "sticking." Per dozen, 3 in.—1s. 6d.; 4 in.—1s. 8d.; 5 in.—1s. 9d.; 5½ in.—2s.; 7 in.—2s. 4d.; 8½ in.—2s. 8d. From your dealer, or from **SWAIN'S** Papercraft Ltd., Dept. 6, Buckhurst Hill, Essex.

TAPE-TO-DISC

TAPE TO DISC RECORDING. Microgroove LP from 27s. 6d., 45 rpm EP—20s., 78 rpm—11s. **48 HOUR RETURN SERVICE—FINEST QUALITY.** S.A.E. for comprehensive leaflet to: A. D. Marsh ("Deroy Sound Service"), 52 Hest Bank Lane, Hest Bank, Lancaster.

FOR SALE

GELOSO G256. Bought February 1960. Perfect condition. £19 or nearest. Box 410, *Tape Recording Fortnightly*, 1, Crane Court, London, E.C.4.

HARTING HM8 Four-Track Stereo/Mono Recorder, as new. Cost £90, Bargain £65. Box 411, *Tape Recording Fortnightly*, 1, Crane Court, London, E.C.4.

Spring, H. A. (Male). 16, Newquay Avenue, South Reddish, Cheshire. General interests. Contacts home or abroad. 1½ to 15 ips. 7-in. spools.
Stevens, Bernard (24). 74, Rue de Trazegnies, Pont-a-Celles, Hainaut, Belgium. Stereo musicals and popular music. 3½ and 7½ ips.
Talling, Jack E. (33). F2a-64 Hough Green, Chester, Cheshire. 7½ and 3½ ips. Message spools only.
Taylor, Peter (28). The Old Smithy, Stoke Poges, Slough, Bucks. Motorcycle scrambling. 5½-in. spools.
Thompson, W. G. (Male, 24). S.A.C. 2762420, R.A.F., 4, Willowside Poultry Farm, Royston, Hertfordshire. General interests. 3½ ips. 5½-in. spools.
Tomlinson, William J. (47). 62, Beacontree Avenue, London, E.17. General interests. Commonwealth contacts wanted. 5-in. spool.
Towell, Philip P. (30). 107, Spilsby Road, Boston, Lancashire. Music and hi-fi. 3½ and 7½ ips. 7-in. spools.
Wilcock, Thomas (27). 9, Grosvenor Crescent, Arksey, Doncaster. English speaking French contacts wanted.
Woolterton, Robert (16). 72, Rectory Road, Manor Park, London, E.12. Sports; popular, country and western music. 7-in. spools. 7½, 3½ and 1½ ips. Wishes to contact persons of similar age.
Young, P. R. (29). 24, Cavendish Gardens, Ilford, Essex. Motoring.

SCHOOLS

Norwood Green J.M. School. Please contact J. Spicer (Miss), 20, Greenford Avenue, Southall, Middlesex. 300 pupils "exploring this fascinating field."
Raons County Secondary School, Raons Road, Amersham, Bucks. (Mr. Owen.) All speeds 1½ to 15 ips. 7-in. spools.
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Tindale Street J.M. High School (R. P. Aston), 63, Sansone Road, Shirley, Solihull, War.

Send details to "Tape Exchanges," "Tape Recording Fortnightly," 7, Tudor Street, London, E.C.4.

News from the Clubs

(Continued from page 31)

ing sound effects within Coventry station with his Fi-Cord. The effects were needed for a school play Keith is helping to produce.

The committee recently held a special meeting to discuss how to overcome a threat of apathy amongst members. Although pleased with attendance figures, which average 45, members feel it may be wiser to encourage greater practical sessions on subjects such as microphone techniques and sound effects. They suggest it may well be necessary to increase meetings to incorporate these extra curricula activities, and the secretary Brian Spinks is currently canvassing members to this effect.

A demonstration of stereo and mono hi-fi was given to the members of the **Iford** club on March 14 when they welcomed *Tape Recording Fortnightly* reviewer Mr. E. A. Rule along for the evening.

Comparisons between a normal AM

radio and a VHF unit were given and a crystal tuner was also shown and operated.

The whole evening was given over to comparisons between mono and stereo, and in the latter section disc and tape recordings were used to give examples of balance, phasing and bad stereo. Various pieces of equipment were used for the demonstrations, allowing freedom of thought on this moot point.

The whole demonstration had been pre-recorded on BASF double-play tape using a Tandberg Series Six tape stereo recorder. For the demonstration this machine was fed through two Armstrong A10 amplifiers feeding two Wharfedale W3 loudspeakers.

Mr. Rule concluded his show with some tapes which had been recorded at a local scouts' "Gang Show" by Mr. N. Ta'bois using a Ferrograph 4A. The meeting came to a close with examples of electronic music.

A change of secretary has been announced for the **Brixton** club. The post is now being filled by Paul Winchester,

who can be contacted at 5, Rhodesia Road, London, S.W.9.

He replaces Mr. Len Walker who has had to retire for personal reasons. The announcement of the change was received with warm thanks being extended to Mr. Walker for the hard work he had done during the club's formation days.

Colourful posters have been printed for the club. These are being used for an extensive membership drive now in progress, and have been displayed in the libraries, Town Hall, and in various newsagents in the district.

The club has been approached by Mr. Charles Standen, organiser of the "Tape Reading Service for the Blind," with a view to putting on tape complete monthly readings of *Tape Recording Fortnightly* and other magazines, including the Consumer Association's report *Which?*

A number of manufacturers' demonstrations have been held at recent meetings. Latest of these have been the Gramophone Co. on March 28, and Truvox Ltd. on April 11. Lined up for the April 25 meeting was a visit by Recording Devices Ltd., who handle the Stuzzi recorders. Return arrangements have also been made, and on March 4, together with a dozen members of the **South West London** club, they visited the North London factory of Tape Recorders (Electronics) Ltd.

Further tape exchanges have been made—the latest arrangement concerns a contact with the **Crawley** and **Cambridge** clubs.

A combination of sight and sound was demonstrated to members of the **Stevenage** tape and Audio Club when they welcomed to their meeting Mr. Arthur J. Rowles, chairman of the Stevenage cine club and a well-known amateur cinematographer.

Using his 1953 all electrical Grundig recorder he demonstrated how he had synchronised sound commentary with film.

For this he had devised a contraption fondly known as "the moustrap." Operated by a photo-electrical cell, which tripped a switch on the recorder when a clear frame was fed through by the projector, this set the sound into operation. The films shown by Mr. Rowles included one of last year's Stevenage Fair and two of the annual regatta at Wivenhoe.

In **Norwich**, Mr. D. F. G. Spinks of 82, Rider Haggard Road, Hartsease Estate, Norwich, Norfolk, writes to say that at last the "Fine City" has a tape club.

At the inaugural meeting held on April 18, twelve members attended and several more promises were received. Their meeting followed the usual procedure with officials being elected and future plans being laid.

The first meeting of the **Cardiff** club was held on March 18. Five members attended out of a promised twelve, but the organisers believe this reticence will be short-lived. Hospitals, schools and youth clubs were discussed at great length, and the search for a club room was put at the top of the list for future activities.

Local radio and tape recorder dealers have been approached in an effort to broadcast the existence of the club. Prospective members are invited to contact the organiser, Mr. C. A. Weston at 61, Shirley Road, Roath Park, Cardiff.

CLUB MEETING DIARY

Is your club included in this list? If not, send details, on a postcard please, including date of the next meeting.

ACTON: Alternate Fridays at the King's Head, Acton High Street. (May 12.)

BATH: Alternate Wednesdays at 35, Green Park, Bath. (May 3.)

BETHNAL GREEN: Every Friday at Shoreditch Tabernacle, Hackney Road.

BIRMINGHAM: Every Monday at the White Horse Cellars, Constitution Hill.

BLACKPOOL: Every Wednesday at 173, Church Street.

BOURNEMOUTH: Alternate Tuesdays at the Civil Defence Centre, Holdenhurst Road. (May 16.)

BRIDGWATER: Alternate Tuesdays at Erio's Radio, West Street. (May 16.)

BRIGHTON: Every Wednesday at Fairlight School, Pevensey Road.

BRIXTON: Every Tuesday at The White Horse, Brixton Road, S.W.9.

CAMBRIDGE: Every Wednesday at the Mitre Hotel, Bridge Street.

CATFORD: Every Friday at St. Mary's C.E. School, Lewisham, S.E.13.

CHESTERFIELD: Every 3rd Monday at the Yellow Lion Inn, Saltergate. (May 22.)

COTSWOLD: Every 3rd Thursday at the Theatre and Arts Club, Cheltenham. (May 4.)

COVENTRY: Alternate Thursdays at Queens Hotel, Primrose Hill Street, Coventry. (May 11.)

CRAWLEY: 1st and 3rd Mondays in month at Southgate Community Centre.

DARTFORD: Every 4th Tuesday at Dartford Public Library.

DOVER: Alternate Mondays at The Priory Hotel. (May 15.)

DUNDEE: Alternate Mondays at The Salvation Army Hostel, 31, Ward Road. (May 8.)

EASTBOURNE: Alternate Saturdays at Hartington Hall, Bolton Road. (May 13.)

EDINBURGH: 1st Tuesday and 3rd Sunday at 23, Fettes Row, Edinburgh 3.

ENFIELD: Alternate Wednesdays at Bush Hill Park School, Main Avenue, Enfield. (May 10.)

GRANTHAM: Weekly. 1st week in month, Wednesday; 2nd, Monday; 3rd, Thursday; 4th, Friday, at Grantham Technical College, Avenue Road.

GRIMSBY: Alternate Tuesdays at the RAFA Club, Abbey Drive West, Abbey Road. (May 9.)

HARROW: Alternate Thursdays at St. George's Hall, Pinner View, North Harrow. (May 4.)

HINCKLEY: Alternate Wednesdays at The Wharf Inn, Coventry Road. (May 10.)

HUDDERSFIELD: Fortnightly, alternate Thursdays and Fridays at the Congregational Church Schoolroom, Great Northern Street. (May 4.)

ILFORD: Every Tuesday at the RAFA Rooms, Cranbrook Road.

IPSWICH: Fortnightly, alternating Fridays and Saturdays at the Art Gallery Committee Rooms (May 20) and the King's Arms Hotel, Cornhill (May 5.)

KEIGHLEY: Alternate Wednesdays at the South Street Sunday School Rooms. (May 3.)

KETTERING: Alternate Wednesdays at the Rising Sun, Silver Street. (May 10.)

LEEDS: Every Thursday at the British Legion Club, Albion Street, Leeds 1.

LEICESTER: 1st and 3rd Friday at Bishop Street Reference Library.

LONDON: 2nd and 4th Thursdays at the Abbey Community Centre, Marsham Street, S.W.1.

LUTON: 2nd and 4th Tuesdays at Flowers Recreation Club, Park Street West, Luton.

MAIDSTONE: Every Thursday at The Armstrong Hall, South Park.

MANCHESTER: Every Saturday, 6 p.m., at 20, Naylor Street, Hulme, Manchester 15.

MIDDLESBROUGH: Every Tuesday at 130, Newport Road.

NOTTINGHAM: Alternate Thursdays at the Co-operative Educational Centre, Broad Street. (May 11.)

PLYMOUTH: Alternate Wednesdays at Virginia House, Plymouth. (April 19.)

RUGBY: Alternate Thursdays at the Red Lion, Sheep Street. (May 4.)

SOUTHAMPTON: 2nd and 4th Thursday at The Bay Tree Inn, New Road.

SOUTH DEVON: Alternate Wednesdays at the Man Friday Cafe, Torwood Street, Torquay. (May 3.)

SOUTH-WEST LONDON: Every Wednesday at Mayfield School, West Hill, S.W.18.

STAFFORD: Alternate Tuesdays at The Grapes, Bridge Street. (May 16.)

STEVENAGE: Alternate Tuesdays at the Tenant's Meeting Room, Marymead. (May 9.)

STOKE NEWINGTON: Every Wednesday at 53, Londesborough Road, N.16.

WALTHAMSTOW: Alternate Fridays at 26, Church Hill, E.17. (May 5.)

WARE: 2nd Tuesday at The Old Brewery Tap, High Street.

WARWICK: 1st and 3rd Wednesdays in Room 18 of the Royal Leamington Spa Town Hall.

WEST HERTS: Fortnightly, alternating at the Cookery Nook, Watford (May 17) and Heath Park Hotel, Hemel Hempstead. (May 3.)

WEST MIDDLESEX: 2nd Thursday at the Railway Hotel, Station Road, Hampton, and 4th Thursday at St. George's Hall, Lancaster Road, Southall Broadway.

WALSALL: Every Wednesday at 113, Lichfield Street.

WEST WALES: 1st and 3rd Thursdays at The Meeting House, New Street, Aberystwyth.

WEYMOUTH: Alternate Wednesdays at The Waverley Hotel, Abbotbury Road. (May 3.)

WINDSOR: Every Thursday at The Royal Adelaide Hotel.

WINCHESTER: Every Friday at The Ship Inn.

WOOLWICH: Alternate Mondays at "The Armstrong Gun," Vincent Road, Woolwich. (May 8.)

YORK: Every Monday at 11, Southlands Road, off Bishopthorpe Road, York.

Unless otherwise stated, meetings start between 7 and 8 p.m.

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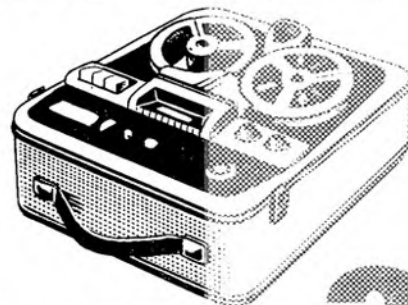
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.. TK.55	...	63	-
.. TK.60	...	75	+
.. TK.830/3D	...	63	-
.. Cub	...	35	-
Telefunken 85	...	60	+
.. 85	...	65	-
.. 75/15	...	55	-
.. 76K	...	55	-
.. 77K	+
Philips 8108	...	57	6
.. 8109	...	63	-
.. EL3538	...	63	-
.. EL3542	...	63	-
.. EL3536	...	70	+
.. EL3515	...	57	6
.. EL3541/15	...	57	6
Cossor 1602	...	57	6
.. 1601	...	63	-
Stella ST455	...	63	-
.. ST454	...	57	6
Saja MK.5	...	57	6
Stuzzi Tricorder	...	58	-
Saba	...	63	-
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.. Escort	...	57	6
.. Major	...	63	-
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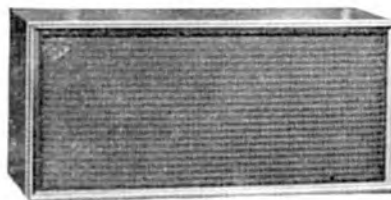
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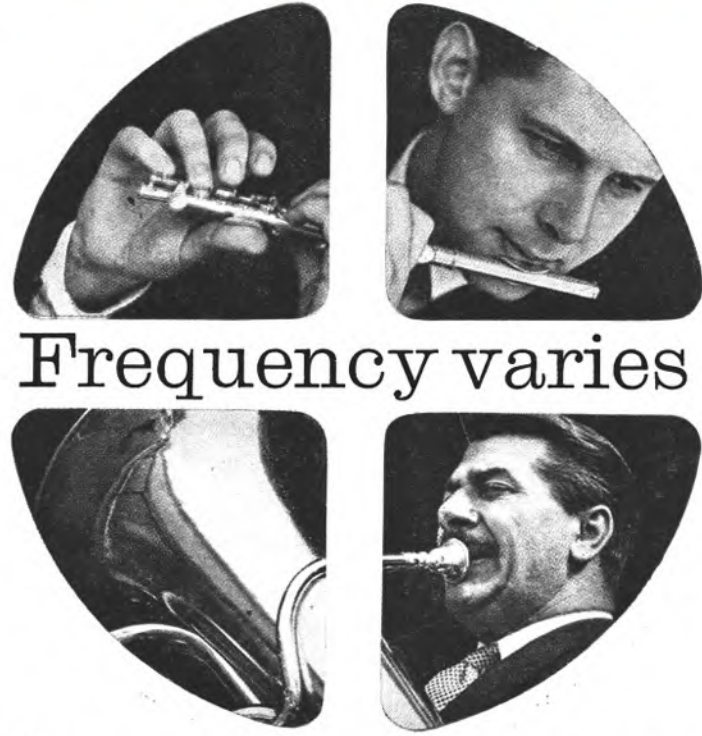
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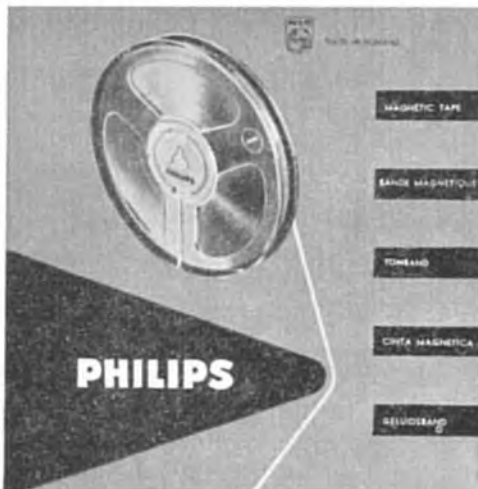
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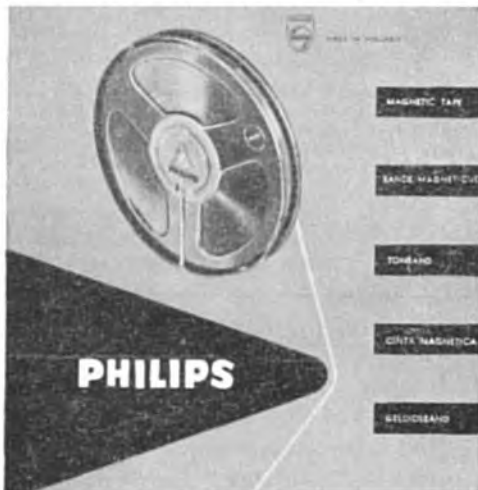
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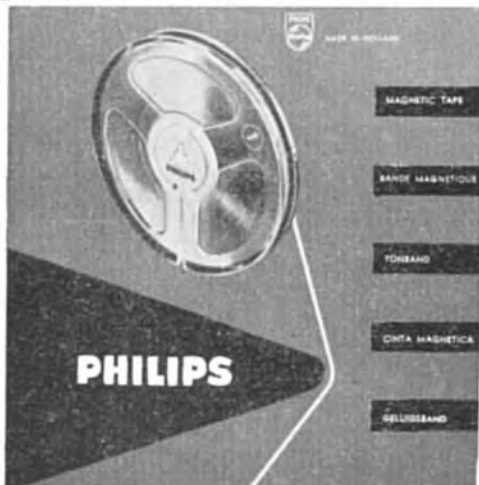
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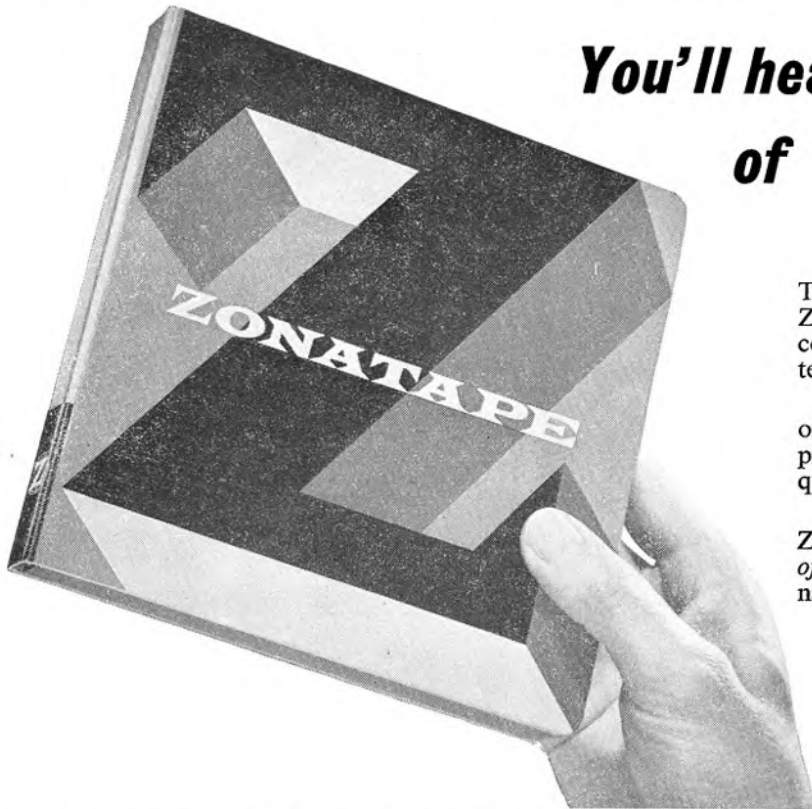
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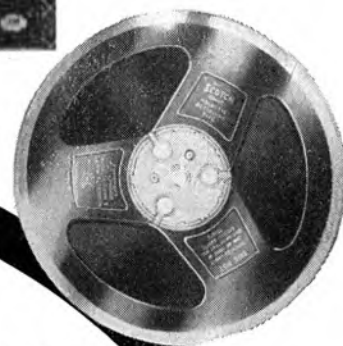
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TAPE

RECORDING
FORTNIGHTLY

Vol. 5 No. 10 17th May, 1961

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We take the view . . .

A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

I HOPE that readers who are interested in recording sound effects—and our experience last year when we published the regular series by Alan Edward Beeby suggests that practically everyone is fascinated by this activity—are not missing current programmes in the BBC “Sound” series.

In the last programme we had Charles Ladbroke speaking of the unique experience he has gained in over a quarter of a century at this business. He is a master of the craft, and he has tackled just about every problem that could conceivably be presented to a sound effects man.

Undoubtedly the most encouraging thing he had to say to amateurs in his broadcast piece was that they should be able to produce any desired sound in their homes if they use enough thought and ingenuity. It was reassuring to know that he produced that wonderful sound-track of the Battle of Agincourt for Olivier’s “Henry V” by the good old coconut-shell method.

The other programme on this subject went out last Sunday and, if you missed it, it will be repeated next Monday. In this, Peter Hall, the Director of the Royal Shakespeare Theatre, describes how he has secured the desired sound effects for some of his notable stage productions. Donald

McWhinnie, a former BBC producer who has now gone over to the live theatre with great success, and Harry Craig, a critic, also have some interesting experiences to describe on the subject of “Sound in the Theatre.”

I think amateur enthusiasts should get a lot of stimulus and some worthwhile ideas from these programmes. They do not include lots of actual effects; what a temptation that would offer! It is no good giving people the opportunity to take their effects off the BBC broadcasts. Marguerite Cutforth, producer of this programme, has adopted the more sensible approach of giving guidance and stimulus to those who are willing to make their own experiments.

The “Sound” programme will soon be having its annual summer “rest,” but it will be back on the air again in the late summer.

of them is critical of the customer, although the authors incidentally have some hard things to say about dealers and service engineers.

During the past year there seems to have been a lot of grumbling on all sides: customers criticising manufacturers and dealers, dealers joining in the moans about manufacturers, outsiders, such as the Consumers’ Association, wading in with some heavy hitting, and so on.

We have felt it right that our columns should be kept open for this discussion; if people are in a critical mood, it is best for everyone that they should have a chance to put their case and to have it answered.

But the time has come when, we suggest, manufacturers, dealers and amateur enthusiasts might pause and consider whether there has not been enough mutual recrimination. It is time now that tape recording should take another big stride forward and there are signs that it will be possible before this year is out.

Let us stop, then, arguing among ourselves. Let the amateurs organise themselves effectively in clubs and produce constructive, coherent views to guide the industry. There is still a lot to be done in this direction.

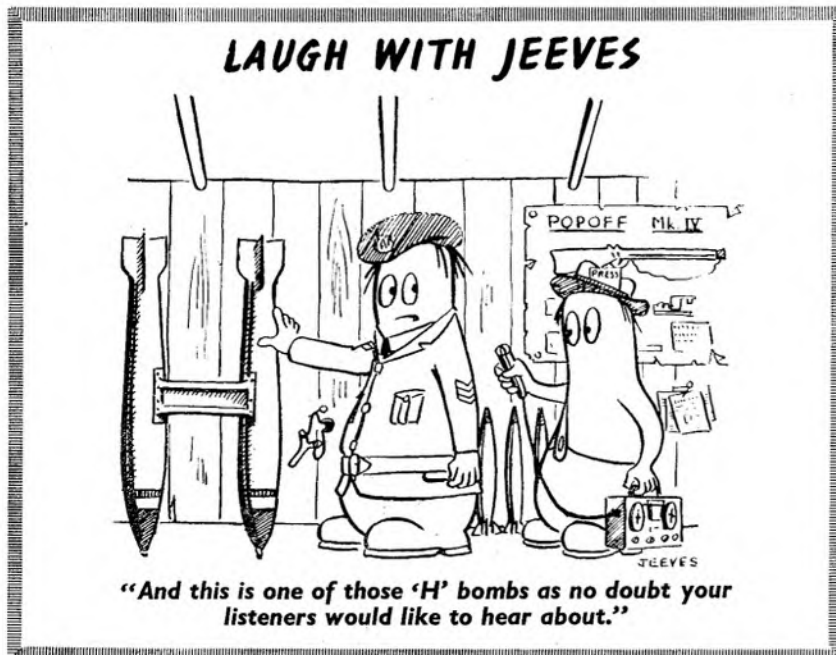
Let the manufacturers encourage this trend enthusiastically, for the body of informed customer-opinion that a well developed club movement could offer should be of great value to them; if they made even a small part of the money they spend on market research available for practical assistance to the club movement, they would get the dividends they deserve.

Let manufacturers and dealers recognise that already tape recording is well passed its childhood phase and potential customers cannot be treated as children. They are entitled to adult salesmanship and to efficient after-sales service. There is still a lot to be done in these directions, too.

We shall be much happier to help all in the industry and hobby to pursue these policies than to continue to offer space for frustrated bickering.

Hold the critics

IN this issue we publish two articles which are critical of something or someone in the world of tape recording. Essentially, each



TRANS-ATLANTIC TAPE CONFERENCE

AUDIO engineers in England and the United States confer over inter-continental broadcast telephone lines to compare latest advances in techniques.

Seen at the U.S. end of the conference are (standing at controls) Arthur E. Fury, electronic and acoustical consultant to Shure Brothers, Inc., microphone manufacturer; (seated, left to right) C. J. LeBel, secretary, Audio Engineers Society; Col. R. H. Ranger, Ranger-tone, Inc.; and A. W. Schneider, general manager, Commercial Radio-Sound Corporation.

Held in Mr. Fury's New York City offices, the conference was matched at the British end of the line by a panel from the Association of Public Address Engineers, meeting at Harrow. Americans used the new Shure 545 Unidyne III dynamic microphones shown here.



A member of the Post Office Engineering Union staff prepares tapes for despatch to the 250 branches spread throughout the country

THE WORLD OF TAPE • A NEWS ROUND-UP

UNIONS TAPED

ONE of the criticisms of the Trade Union Movement is that the headquarters and national officers of many trade unions are out of touch with the ordinary member. The Post Office Engineering Union, which represents some 75,000 members, discussed this problem last year and decided to tackle it in a way never before tried in such a Movement. And this personalisation of their union has been made possible by the use of tape.

Circulars, journals and printed material play a large part in union life, but the union officials felt that not enough members were reading all the literature. And as the use of tape recorders was becoming more widespread it was decided to put a couple of messages on tape and circulate the 250 Branches throughout the country saying that tape recordings made by the General Secretary and other leading Union officials were available for use

at Branch meetings. The report of this plan appeared in our November 16 issue.

The response has been overwhelming. The first tapes were made last summer, and up till January of this year the original tapes were still being requested by Branches.

A letter sent to the branch secretaries informing them of the existence of this tape led to no less than sixty trunk calls within 24 hours asking for copies.



CONDUCTOR Cyril Ornadel tries out the new TK1 on a recent visit to Grundig's London Showrooms. Mr. Ornadel, who already owns two Grundig recorders, has just recorded for M.G.M. with the Starlight Symphony Orchestra a series of long-playing records which include the musical works of Cole Porter, Rogers and Hammerstein, and Werner and Louwe.

IN BRIEF

THE Audio Manufacturers' Group of B.R.E.M.A. have taken over responsibility for the general organisation and layout of the Audio section at this year's Radio Show at Earls Court, and will administer it in association with Audio Information Services.

The section will again be on the first floor of the Earls Court building, over the Philbeach entrance.

The layout will be based on an entirely new plan providing for all sizes of firms and stands, and offering prospective exhibitors a much greater elasticity of choice than hitherto.

Smaller firms which have not previously been able to consider exhibiting on account of the cost will this year be given a chance to do so. This final proviso points to an even greater audio section than ever before.

AUSTRALIAN airlines are to carry flight recorders to tape cockpit conversations and instrument readings which could be useful in inquiries after crashes to establish their causes. This has been decided after an inquiry failed to find the cause of a crash in Queensland.

ONE of the first nature study films to have a fully synchronised soundtrack—Philip Wayre's colour film of wild life on the Norfolk Broads, "Wind in the Reeds"—used an E.M.I. Electronics battery portable tape recorder, the latest transistorised version of which was shown for the first time at the International Audio Festival.

"Wind in the Reeds," which bears comparison with Walt Disney at his best, took three years to make. Its premiere will be the main attraction of a film show in aid of the Imperial Cancer Research Fund, at the Royal Festival Hall, on April 15.

ALAN EDWARD BEEBY'S TAPE TALK

RETURNING to Northampton from a recording session at Peterborough recently, we got lost. It was all Shirley's fault: she had requested a detour to an out-of-the-way spot in order to obtain photographs of some ruins for an article she had written.

Gradually, the road disappeared as we zig-zagged and bumped over unmade cart-tracks, the Vortexion on the rear seat bouncing about in an alarming manner which didn't argue awfully well for the preservation of its finely-balanced interior mechanism. Finally, we stopped: halted by a profusion of wild grass, gorse bushes, overgrown hedges . . . and a solid-looking five-barred gate!

Switching off the engine, I sat back and waited for the usual, totally-irrelevant pearl of profundity that would surely follow. "It's very pretty out here, isn't it?" observed Shirley, with an air of complete unconcern for our predicament. Then, before I could think up a suitably-biting retort about amateur magazine-photographers, she said: "Oh look, there's a man up in that tree!"

Sure enough, there was: what was more, he had an intriguing assortment of wires dangling from his belt, while over his shoulder, a leather strap supported the unmistakable oblong shape of a Fi-Cord. Left hand anchored around the tree trunk, right hand holding two microphones aloft, he was intent on the task in hand, and had obviously not noticed our approach. At the foot of the tree stood a small shooting-brake, in the rear compartment of which a Ferrograph whirred merrily. A moment or so later, he caught sight of us, climbed down, and we introduced ourselves.

To my surprise, he turned out to be from Northampton. His name was George Freeman, and he was out collecting bird-recordings. Naturally, the Vortexion was brought out for inspection and, pretty soon, we had it connected up and I was helping by shinning up and down nearby trees at George's instructions. After an entertaining two-hours initiation into the intricacies of bird-recording, we finally packed up the gear and left, after accepting George's kind invitation for Shirley and I to visit his home on the following evening.

I shall remember that evening for a long time to come; particularly the moment when George opened a small cupboard fairly bulging with tape spools of every shape and size. Talk about the BBC Sound Effects Library! Birds, trains, ships, cars, horses, bells, guns, bombs, aircraft, rockets—even a 15-minute long sound-reconstruction of the Battle of Trafalgar!

"How long has it taken you to assemble this little lot?" I gasped. "Oh, about two years!" he said. "Ever considered joining a club?" I asked him, thinking in terms of a possible scoop for the local tape and cine group, George smiled and shook his head. "No, I

prefer to work alone" he told me. "In another six months, I hope to have a really good coverage of effects, then I have one or two plans in mind of my own."

He's a modest sort of chap, is George: not the type to go shouting about the things he's done. Don't make any mistake, though. Before very long, and unless I'm very much mistaken, you're going to be hearing quite a lot about George Freeman.

MY recent note on the copyright tangle seems to have sparked off quite a lively response, including one anonymous letter from a reader in Sheffield. In the course of his remarks, the writer expresses concern at my having wasted valuable space, while his closing statement was a charming little gem of frankness.

It read: "Fancy writing all that twaddle about something which is quite easy to understand. You must be mad!"

Showed it to the Editor. Didn't care for the way he chuckled and rubbed his hands together . . . !

Having just completed the fitting-out of a new recording room at my home, I decided to forestall any ill-timed interruptions during a "session" by wiring a red signal-light outside the door together with a notice saying: "Please do not enter while red light is showing."

It works. People don't walk in any more . . . THEY HAMMER ON THE DOOR FIRST!

Do you ever get that "Is-it-all-worth-it?" feeling?



TALKING to "Professor" Stanley Unwin the other day, I asked him if he had any views on the business of tape-recorded sound effects.

"Yes," he said, "the profound joy of collecting and having all types and fundamold of sounds perhaps to dramatise the backgrove of a sawn-off shotgun, or the scintillating of ephemeral planetary hovey effects, definitely!"

I suppose it was my own fault for asking!

If, like me, you're an admirer of Stanley's unique brand of nonsense, listen to his new LP disc, "Rotatey Diskers With Unwin." This is off-beat humour at its best and funniest.

OUR Star Shop Service Spot, this time, features Cambridge. Reader, M. E. Renshaw, secretary of the newly-formed Cambridge Amateur Tape Recording Society, has recommended the following two dealers in that area who offer first-class service and advice to tape enthusiasts: Messrs. G. P. Reece, Peas Hill, and Leader's Music Store, 53 Burleigh Street, Cambridge.

ANYONE receiving an unsolicited communication from a firm calling themselves "Unique Tapes" would be well advised to pass the matter over to the police. The tape recordings concerned are, to put it mildly, of a highly undesirable nature, hiding behind the corny, bewhiskered old line: ". . . adult poetry-readings for the connoisseur."

I understand that the penalties for trading in, copying or distributing taped material of this sort are the same as those already imposed in respect of the printing, photographing and filming mediums.

One of our readers from Kettering called on me the other day and showed me three letters which he had received from the above-named firm, all in the space of a month.

It was, perhaps, merely a question of time before this type of objectionable rubbish found its way on to the market in tape form. The makers, of course, play safe in that no names or addresses are mentioned in the letters: simply a box number. The only signature contained therein is a completely illegible scrawl accompanied by the typed p.p. "For the Directors."

It took only a little elementary detective work on my part to discover the identity of the two gentlemen ("The Directors") responsible for the circulation of "Unique Tapes." They are two former West Indian immigrants, living in furnished rooms in a London suburb. Sorry, gentlemen, but we're not interested in this kind of literary garbage. Try the export market. Jamaica, for example . . . !

Recording a play in the classroom

BBROADLY speaking there are two ways of recording a play. First there is the continuous run-through in one session, and secondly the "film method" of making isolated takes in any order and editing them together later. Both methods have their advantages, and of course the choice of either may be dictated by local conditions.

For school work I prefer the continuous session, though I have had to adopt the other when boys have only been able to come for 45 minutes at a time.

Editing gives the producer great freedom. It is one of the things that make tape such a flexible medium, and therefore it might seem foolish virtually to dispense with it. However, recording will always be a tug-of-war between art and technics, and we must be certain that the art wins. It is all too easy to rely upon the skill of the editor rather than that of the actors. All too soon the producer can develop an "editor's ear" that hears sounds and not words, like the hi-fi man who may hear frequencies and not music. The acting must always be the important thing.

ATMOSPHERE

To act well, amateurs need the atmosphere of a play round them. They respond to each other, and a continuous run-through allows them to establish an atmosphere and see the play as a whole. Short takes demand more of the actors' imagination, although it is true that some people who cannot sustain a part can act well for brief periods. But amateurs—and children—can seldom "freeze" their performances. They are always changing, for better or worse.

For this reason it is easier to rehearse and record the play as a whole, and bring all the cast up to their best together. With a stage production it demands fine judgment to bring it to the boil for the first night, but the tape producer is free to record whenever he chooses. He can even make two or three versions and keep the best. But there should be some sense of occasion about the final recording. It puts the actors on their mettle.

Recording a play is great fun, and in school the cast should share as much of it as possible. They should make their own spot effects and even, if they can, their own music. It's far more fun than editing-in effects records and gramophones, and it employs those who cannot have a speaking part. At the end

JOHN BELL, Headmaster of Manchester Grammar School, gives guidance on a subject which permits active participation by pupils of all grades

they can all feel that it is their play, and this is not so likely if they only hear it complete when it emerges from the editor's room.

The successful use of editing makes certain technical demands which have to be satisfied. There must be exact continuity of voice from each actor, and the acoustic must never vary. Many amateur recordings are let down by the fact that their producers do not know enough about acoustics, but it does help if one keeps the production method simple.

ACOUSTICS

The continuous run-through demands a little studio organisation, even if the studio is an ordinary classroom. Few schools are lucky enough to have a recording studio with the producer in a separate room linked to the cast by talk-back. That is ideal but unhappily rare. Adapting a classroom is our normal task. To begin with, use a slim stand that holds the microphone at average chin height for your cast. Clear the area all round it, and if possible put a carpet or mats on the floor to deaden the acoustic.

Most classrooms boom like cathedrals. Make the cast wear soft shoes or none at all, and teach them to turn over scripts without rustling. Then, since this is to be, perhaps, twenty minutes non-stop recording all the cast must know and

rehearse their moves around the microphone. These should be noted on their scripts.

If the whole cast cannot stand round the microphone at once, give resting actors a place to stand. If they sit on a chair they may move it—audibly! When working out the moves, approaches and so forth, remember that the effects man must have his place at the microphone, and a table with a blanket over it on which to keep his equipment.

In the earlier stages of a school production the cast have to adapt themselves to the strange—and often comic—business of acting face to face round a mike. Particularly they must get used to their sound effects. Altogether, the continuous method demands concentration from everyone, but it can be great fun and helps the actors, I think, to give of their best.

The best material for recording is, of course, the radio play. Unhappily, few of these are published, but there are two books which may be found useful, *Radio Theatre*, a selection of plays edited by Val Gielgud, and *Radio Plays*, by L. du Garde Peach.

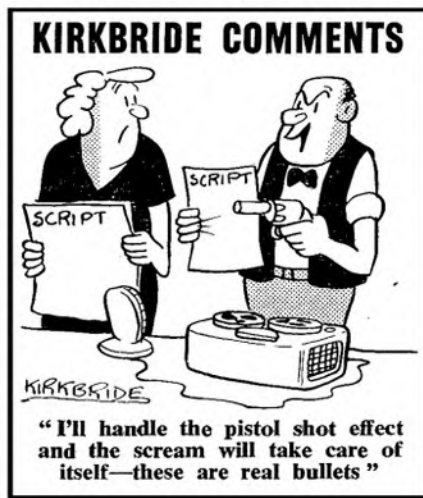
Some very useful work is being done in this field, however, by Ian Ball and Marion Macwilliam with their series of books called *May We Recommend*.

ALL GRADES

These are plays for children of various ages, graded from the simple to the more sophisticated and they consist in many instances of adaptations from famous novels. They are all plays which have been broadcast.

Apart from material written specially for the microphone, there is a great deal that can be adapted. Shakespeare, with his stage-directions and natural "fades" in the dialogue records very well. So do moralities, which, like the plays of Shakespeare, were written for a stage that had no scenery.

Adaptation is fun, and I have personally enjoyed using a Thurber short story, *The Secret Life of Walter Mitty*, in this way. Some of his Fables would adapt equally well. Adaptation will teach you the problems of the script-writer, problems which you should discuss with your cast. In this way they can learn a great deal about how a sound play is put together, and what are its limitations and possibilities.



LOOKING back over the past month I am happy to see that a number of my own sex have contacted me to assist in my search for their reasons for taking an active interest in tape recording.

Apart from those I deliberately set out to find, my husband and I had the pleasure of meeting Mr. Peter Crowe and his wife who have the good fortune to own a Telefunken Magnetophon M24. They are also anxiously awaiting the arrival of an Ampex Model 953 stereo.

This charming and interesting young couple have a very active interest in exploring the possibilities of electronic music. They are both performing musicians and composers. Peter read music at Victoria University in New Zealand while his wife studied at Sydney Conservatorium, so they have a very solid basis for investigating this fascinating new field.

I was greatly impressed by one of their compositions which they played back to me, and was quite staggered by the wild impact this strange new music made on me. The work requires a great deal of imagination



and an even greater amount of patience; three months work to complete three minutes recording time is reckoned by the Crowes to be an average output!

My search for the woman's angle in tape recording reveals a considerable feminine interest in tapespondence. A great many ladies, although newcomers to recording, are discovering the thrill and excitement of exchanging tapes with friends who might perhaps live on the other side of the world. If you find writing a letter to be a hardship, then, send a tape; you will find it will be received enthusiastically at the other end and you will have the pleasure of a spoken reply to look forward to.

By the way, if you imagine that interest in tape recording is going to confine you to the four walls of your own house, just take a look at the picture right, which was taken at London Airport. We were making stereophonic recordings of the air-

My Diary



craft as they landed and departed, and I am speaking to our recording technicians over the field telephone system. This was a gloriously sunny day and our enjoyment of it was increased by listening later to the very excellent recordings we had managed to achieve.

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Make way for the

LADIES

Personality of
the month—5
Miss Evie Mears

A new regular
monthly feature

Edited by
Vivienne Gooding



I'M going to have imitation bricks over the chimney breast, and I think that I'll have lots of green stuff growing on shelves in this alcove here. Of course the wardrobe will have to be concealed, and there will be a pair of easy chairs just here. No, I think I'll have one here, and another one just there."

As attractive and petite Evie Mears bubbled over with her plans for decorating and furnishing her new room she was stirring a gallon pot of paint with one hand and tapping out the rhythm of one of the latest jazz hits with the other. On the trestle table which held a litter of decorating paraphernalia there stood her Grundig TK20; manfully coping with Johnny Dankworth and a dozen other top-line jazz artists. Evie herself was dressed in a workmanlike pair of slacks and it was very obvious from the progress she had made already that this room of hers was going to be completely "Evie" and nothing else.

I had come along to see Evie because I thought she represented the "typical teenager," a vivacious bundle of young womanhood who not only knows where she is going in life but also knows exactly how she means to get there.

She works on the staff of one of the better class woman's magazines where she started as a junior. Now, through her work and perseverance, she is beginning to make herself felt. As you might expect she has a lively interest in fashion design and lay-out, and her ambition is one day to hold a top executive position on the magazine. Will she make the grade? It certainly won't be her fault if she doesn't.

Her recording equipment is not elaborate but she does get the maximum use out of it. Her passion for modern music has resulted in the acquisition of a pile of tapes, one of which would seem to be on the machine whenever she's at home.

Like a great many youngsters of her age she is also beginning to find quite a little satisfaction in the classical composers and when she talked music she was quite carried away in her appreciation of Sibelius.

Evie has a very attractive singing voice and she recorded "Summer Time" from *Porgy and Bess* for me in the midst of her decorating operations. She would quite enjoy singing with a professional band, but is sensible enough to realise that such things should not be allowed to interfere with her career.

During her free time she loves to explore London Jazz Clubs, always on the look-out for something new both in music and design.

Her friends form a very animated and intelligent bunch of youngsters, always eager and ready to discuss the imponderable problems of life in the 60's. As we talked I pictured to myself those other sets of teenagers that have been so much in the news recently: the cinema wreckers and the truculent delinquents of the new towns. I marvelled that our society could produce such a living condemnation of itself on the one hand whilst at the same time it could also produce Evie and her friends on the other.

I remarked on this state of affairs to Evie and pointed out to her that not only was she of the same age group as the young hooligans, but also she might even have the same musical tastes as some of them. Immediately she retorted that a liking for modern jazz does not necessarily mean either an anti-social attitude or an addiction to reefer cigarettes. In fact amongst the genuine fans these people are in the minority.

"The trouble with youngsters who go off the straight and narrow," commented Evie, "is that they seem to lack the intelligence to do anything constructive and so spend all their time being destructive."

With these words of wisdom she shinned up a ladder, yelled at me to hold the other end of her roll of wallpaper, and was again as absorbed in her work as she had been when I walked into the room an hour earlier.

CHILDREN'S CORNER

HAVE you had your birthday this year yet? If not perhaps Mummy will let you invite some of your friends to a party and let you use the tape recorder for some of your games.

Have you ever played "Whispers"? It is such good fun that I know quite a lot of grown-ups who play it, too!

This is what you have to do. You have to call one of your friends out of the party room into the hall and whisper a short message in his ear: something like "I like Christmas, do you?" He then goes into another room where with Mummy or Daddy's help he records what he thought you told him and when he has done that he has to whisper what he recorded to the next person to come out of the party room.

That one in turn records what he thought he heard and passes the message to the next one until everyone has had a turn.

When you play the tape back you will find all sorts of funny versions of the original message have been recorded on it and the very last one will be nothing like the first at all. If you use the message that I have suggested it might end up as "I like serving stew" or something like that, but part of the fun is in thinking up your own original messages to start the game off with. If you are clever about this it might end up as something very funny indeed!

ALONG THE GRAPE-VINE!

YOU can be quite sure that *Tape Recording Fortnightly* will always be first to disclose information on any new developments in the recording world. Although yours truly may be no more than a female gossip writer I have the feeling that the technical boys may be so startled when they read these lines that they will either disbelieve it entirely or will painfully entangle their beards in their slide rules as they try to work out how it has been done.

I am referring to a top secret development in microphones. This is an instrument employing completely new and revolutionary principles in microphone

manufacture, and I am afraid I can tell you no more than the apparently contradictory facts that it is an omnidirectional ribbon instrument.

Research and manufacture is being undertaken by a British Commonwealth country and I have it on good authority that the Ampex Corporation of America has referred to the microphone's qualities as "impressive." I have heard it myself and believe that it will set completely new standards for the whole industry.

As soon as more information is officially released I will be very pleased to pass it on to you.

CREATIVE TAPE EDITING

ONE of the most useful techniques for the owner of a home tape recorder is that of tape editing. It is of tremendous value in making professional-sounding tape recordings, and can be an inspiring and creative hobby in itself.

Perhaps the greatest satisfaction to be gained from learning to edit tape well comes when you play back a smoothly spliced tape, one that is free from the false starts, the pops, squawks, and other extraneous noises that clutter up so many home-made tape recordings.

There is also satisfaction, not to say amusement, in putting into practice the many useful tape-editing tricks that are possible. You can join together on tape the separate sides of your valuable 78-rpm records into a continuous long-play performance. Or you can assemble numerous odds and ends from different reels of tape into one programme. And after you become adept at tape splicing, you can try some fancier tricks, such as altering the meaning of a recorded speech merely by transposing some of the speaker's words.

All tape editing, no matter how sophisticated, involves one simple act repeated again and again: the joining together of two pieces of tape. Once this technique is mastered, you will begin to find editing truly exciting. As you discover the tricks of sound-joining, you can enter limitless areas of experiment.

The initial step in tape editing is to find the proper place on the tape for the splice. First locate the playback head (the last head in the direction of tape movement) so you can mark the desired spot on the tape precisely as it passes over the head. (Use a black grease pencil for marking.) Look into the tape slot to locate the playback head, then mark its location on the covering cowl above. When you have determined the splicing place by ear, you can lift the tape straight up out of the slot and mark it at the indicated point. For maximum accuracy, however, it is better to remove the cowl and mark the tape directly at the playback head.

On larger, professional-type machines the tape lifters are manually controlled, and you can play the tape slowly by hand to locate the sounds you wish to edit. In fact, most modern home-type recorders have a "pause" position, which allows you to rock the reels back and forth by hand. Machines that do not have this "pause" position raise problems because they only allow you to listen to the tape at normal playing speed. On such machines you have to resort to quick and deft use of the stop control. Experiments will indicate how you should solve this important problem in your own case. The greater your precision the more you can do in the way of useful and effective editing, and the fewer mistakes you will make.

The beginning tape editor should concentrate at first on editing speech. Although this is a less exacting area than music editing, it is probably more fun. You can join different passages, even in the very middle of a word. You can edit out words, whole sentences or paragraphs, or insert new material in place of the old. You can remove grammatical mistakes, hesitations, speech faults, repeats, and hems and haws. You can insert or shorten pauses and thus change the speaker's apparent mood and emphasis.

By
Edward Tatnall Canby

HERE is a basic rule for editing speech (and anything else): Edit by joining silences. Look for gaps in the flow of speech, whether at the end of a sentence, in the middle of a thought, or between syllables of a word. You will find what will seem at first an astonishingly large number of these. Some take up perhaps no more than an eighth of an inch on the tape. But that is plenty. Locate the silent place as accurately as you can, mark the spot with your black grease pencil, straight across the tape. Locate another silent place—it may be at the end of a sentence or a word—then slice your tape diagonally (passing the blade through the centre of the black marks) at these two points, match up the ends, join them together, and play the tape back. After a few tries, you'll hit a perfect splice—so smooth you cannot hear it—and that's when the fun begins.

As an amusing beginner's exercise, start by making word salads. Take a stretch of spoken recording (or make one on the spot) and hash it up into nonsense. Take out words, join unrelated bits of sentences, transpose sections—always, of course, trying for a natural and convincing effect. When you have completed this bit of frequently riotous lunacy to your satisfaction, try some sober, responsible editing in the same fashion, and you'll be startled at the ease with which you can improve a speech after it has been made.

With no more than this simple silent-place technique—the joining of silences between speech sounds—you can develop surprising skill. The same technique, incidentally, can be applied to recordings of music. Its effectiveness depends on the large amount of silence that is inherent in all speech and in many types of music. The length of the silences may vary from a mere instant to a lengthy pause, and

you will soon discover that the quality and length of these silences fulfill a subtle but important function in the conveyance of meaning.

By manipulating these silences, you can alter the sense of speech in astonishing ways. The very syntax of a sentence can be altered by the tampering with the pauses and breathing points. Feelings of urgency and nervousness, relaxation and calm can be evoked, and moments of climax or anti-climax may be shifted, all by a simple device of adding or subtracting silences.

But here are two warnings: First, never use blank tape for the insertion of silences. The silences in a recording are never really silent. They are coloured by the natural background noise of the recording location. Splicing in a piece of blank tape will merely give the effect of a momentary power failure. Instead, use silent places clipped from the recording itself; save up bits of silence that include faint but natural background noise to be spliced in wherever they may be wanted.

Second, never forget that people breathe when they speak. Allow for the intake of breath when you join phrases. Don't remove the breathing unless you want an unnaturally rushed, all-in-one-breath effect. Above all, don't accidentally join two intakes of breath in a row. The person speaking will seem to swell up like a balloon. You will discover that the manipulation of breathing and assorted tongue sounds is a big part of all speech editing.

In addition to splicing in silences, you need only one more basic speech-editing technique: the joining of "sound bumps" (for that is what they sound like when you move the tape slowly across the playback head). You can join a whole assortment of sounds with precision and exactness if you will study the principle of the sound bump, more properly called a transient or percussive sound element. Not all words contain such bumps. You will find, probably to your amazement, that some common sounds that seem definite enough as you listen to them at normal speed—the sounds of the letter *r* or *l*, for example—become utterly vague and meaningless at slow speed, their length spread out as a hideous groan over a long stretch of tape. You simply cannot locate a sharp beginning or ending. They merge into other sounds; hence you cannot edit them precisely.

If you do try to cut into these sounds, you will discover a curious thing: your tape will seem to create new percussive consonants of its own. Slice into an *r* and inexplicably it becomes *tr* at the

splicing point. A liquid *l*, if you cut into the middle of it, becomes *pl*. These sounds are editing traps. And you will find more of them. Leave them alone.

But let's get back to the sound bumps. They are like road signs to the tape editor. Look for hard consonants, especially the explosive *t*, *p*, and *k* sounds. They are sharply defined, and they are almost always preceded by a tiny gap of silence. Thus you can locate them, often within a sixteenth of an inch, for perfect editing.

Don't think you are restricted to the handling of words as whole units; indeed, perhaps the most fascinating place to edit by the sound bump method is right in the middle of a word. Take a phrase like "time to retire." You can break right into the middle of "retire," and you will find a clear silence after the first syllable, followed by a knife-edge *t* sound, running on into an *i* and a liquid *r*. It should be no trouble at all to mark

kicks, but it will sound very odd indeed. It is possible to join the echo of a chord to the body of a different performance that includes the same chord. However, this kind of patching always carries the risk of creating one of those false percussive effects, a moment of drop-out, or a noticeable "bloop" that may render a theoretically workable joint quite useless. It is safer to allow all echoes to run their full course, safely attached to their parent sounds.

Many a poor joint has been made when the editor, torn between the claims of musical rhythm and aural naturalness, has cut off an echo too soon in order to bring in a new section of music on the beat. If an echo is too long, you must wait, you can do nothing else. The music may lag in tempo, but at least the joint will not be noticeable.

Many times you will have to choose between the lesser of two wrongs, and the decision can be agonising. The fate

open for possible editing spots, for breaks or echo-free silences and percussive sound bumps. Then play these passages by hand, moving the reels slowly, until you familiarise yourself with their character. Try marking the tape here and there, just to see if you can localise editing points precisely. You can hope to find silences only occasionally. You may have to take advantage of partial silences, as in editing an instrumental solo that begins or ends against an underlying web of sound.

Piano, drums, triangles, sharp string attacks, trumpet sounds, and guitars are your friends. They produce sound bumps that can be marked and cut neatly, providing the musical material allows it.

WITH increasing practice, you may tackle more daring operations. For instance, try converting a piano sound

ONCE YOU KNOW THE TRICKS, TAPE EDITING CAN BECOME A REWARDING ARTISTIC EXPERIENCE

the exact location of the gap and join it to a similar gap at another point on the tape.

Nor are you restricted to joining syllables into exactly the words they originally came from. You can graft together some quite sensible words out of odd syllables on the loose. You can, for instance, join the first part of "time to retire" to an entirely different phrase to make "time to retaliate in force." And the leftover "-tire" can be spliced in elsewhere to make, perhaps, "I would soon tire of her," or "I had a flat tire." An adroit hand can manufacture such never-spoken phrases in the speaker's own voice, making them sound as natural as life.

If a mistake is made during a recording session, and you decide to try again, start your second take a sentence or so before the break rather than right at it. Listen to the earlier ending just before you start re-recording, in order to duplicate the tone and pace of the voice in the overlapping repeat. Then, when you splice the two together, you will have a choice of a dozen or so silences or sound bumps at which to make the splice.

* * *

MUSIC, needless to say, is edited in much the same way as speech, and you should provide generous overlaps at all points where two passages are later to be joined. By using this overlap technique you can put together a unified performance from as many separate takes as you care to make. Here, too, you begin by looking for silences and for sharp, percussive sounds with clear-cut beginnings and endings that can be precisely located on your tape.

There is one important principle that is peculiar to music editing. The rule is simple, though often disregarded: Never cut into an echo. An echo prematurely cut off is a most obtrusive and unpleasant sound.

You can manipulate and transpose echoes, but you have to be careful. You won't want an A Major chord with an echo in G Major; you can try it for

of a precious performance often depends on wise judgment. You can involve yourself deeply in such work, if you wish, and it may fascinate and frustrate you into the small hours of the night. But one really successful splice in a difficult spot can give you a sense of accomplishment that will make up for many hours of frustration.

It is enormously difficult to set up specific rules for music editing because of the variousness of music itself. Listen to the music critically at normal speed, then at half-speed, keeping your ears

WHAT ABOUT THE OTHER TRACK?

Home tapes usually carry different recordings on a single reel—one or more in each direction. Obviously, you cannot slice through one track without cutting the other as well. There are three ways out of this dilemma:

(1) Make all your tapes strictly one-way. This sacrifices playing time, but the results, in terms of finished, edited tapes, are worth it.

(2) If your existing tapes already carry programmes in both directions, you may be willing to sacrifice indifferent material in favour of good material. If so, just go ahead and edit the good material and ignore the other.

(3) If the tape you want to edit contains good material in both directions, and you are unwilling to give up any part of it, team up with someone else who owns a tape recorder and copy tape from one machine to the other. This will provide you with a one-track recording, suitable for editing. Depending on how much quality is sacrificed with each transfer, you can then copy the edited tape on a multiple-track recorder.

into an oboe sound. Join the beginning of a piano tone onto an oboe tone of the same pitch, and the two will seem to be one sound. You can manufacture all sorts of hybrid instruments and musical phrases in this way. Or you can do tricks with different recordings of the same music, joining them into a continuous performance, but shifting back and forth from one to the other without perceptible transition. You may even run one composition directly into another, imperceptibly mixing two different works, providing you can match up their harmonies.

Given a sure technique, you will find that your success depends largely on your knowledge of the particular music you are editing. If you know how a symphony is put together where the choruses in a jazz piece begin and end, you can do all kinds of foreshortening, or even lengthening, of the musical structure.

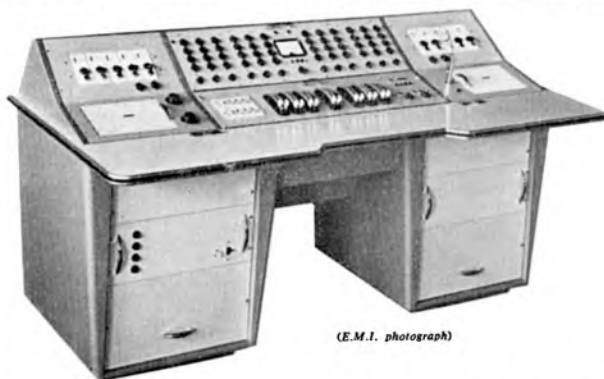
It is remarkable how quickly you can sense the editability of a certain type of music. Beethoven, with his abrupt phases, is sure-fire for editing; so is Mozart, with his clean-cut melodic figures. Carl Orff, with his rapid percussive patterns, his many repetitions, and frequent breaks in sound, is wonderful for editing. Wagner is very difficult; sound bumps are rare in his music, and silences ever rarer. The slow-motion editing technique transforms most Wagnerian music into an unidentifiable mass of sustained howls and groans. Popular music has plenty of percussive sounds, but beware of the big echo. Folk music can often be edited as speech—between stanzas. Blues are easy, but fast jazz is tricky. And so on.

Tape editing is comparable to film editing. Yet, in many ways, the tape editor's means of shaping the final artistic product are more varied and more subtle. Remember, however, that technique is merely a means to an end. The real challenge of tape editing lies in its expressive possibilities. Here is an invitation to a highly personal and truly artistic pastime.

Reprinted from *Hi-Fi Stereo Review*.

SHAPING SOUND—2: CONCRETE AND “POP”

ALEC NISBETT continues his series with a comparison between two styles of music which depend on the transformation and electronic moulding of sound.



An E.M.I. mixer desk. There are five stereo channels besides the echo-return and main gain controls. In the top centre panel are the tone controls; four (plus the echo-send) to each leg of each channel

THE aim when recording music is almost invariably to try and get as faithful a representation of the original sound as possible. But there are exceptions to this rule; cases where distortion of the sound as picked up by the microphones is quite deliberate and intentional. In such cases recording and dubbing become part of the process of composition, of creating the music.

Two types of music which will illustrate this are *musique concrète* and much “pop” (popular music on gramophone records). So different in style, these two do in fact have a great deal in common. Certainly, both have been dismissed with mild contempt by many people with a serious regard for conventional music. And in both fields there has been a great deal of careful thought, and at least a fair degree of achievement.

Amongst the differences between the two it is hardly necessary to point to the fact that one has helped to build a multi-million-dollar industry, whereas the other has been more noted for the massive apathy with which its novelties have been greeted by the public—which must be at least partly due to the early association between *musique concrète* and “advanced” modern composition.

The attitude of the BBC to both *musique concrète* and its half-brother electronic music was initially rather cautious, as also has been its attitude more recently to the distortion of sound as used in some popular music.

That either electronic or concrete music will have in the final evaluation any real lasting importance as forms in their own right is yet to be established. But where these two techniques really

do have a proven value, is in extending the range of sound comment—that is, in providing what the BBC has called Radiophonic effects.

This is the field in which sound effects take on formal musical qualities in structure and arrangement; and musical elements (whether from conventional or electronic sources) complement them by taking on the qualities of sound effects.

Radiophonics does not in general attempt to assert itself as an art form in its own right—it is always an element in a larger picture, and indeed rarely even moves into the foreground of the audience's attention.

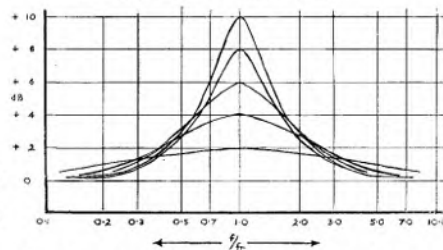
That is not to say that the BBC's workshop cannot handle the purer forms if required to do so—in fact it has, as for example in the case of the *Musique Concrète Reinforcée* required for the satirical survey of the music of the mythical composeress, Dame Hilda Tablet (who has appeared from time to time in the Third Programme). But the Workshop is alone amongst the organisations of its kind in Europe (France, Germany and Italy) in having no single composer regularly working with it. My own view is that on balance this is probably a good thing in that it does at least help to prevent the Unit from latching too firmly on to any particular musical style—though I'd say that this point is arguable, and in any case the answer depends on the talents and musical “personality” of the people available to do the job.

For an understanding of some of the principles involved, let us return then to the form to which radiophonics largely owes its origins: *musique concrète*.

Musique concrète started out quite simply as the transformation and arrangement of recorded sounds, usually short sharp isolated noises or fragments from longer ones (because short sections are easier to handle), according to musical principles—sufficient of the character of the original sound being left to evoke the associations, pictorial or emotional, which belong to it.

The first musical element to be exploited was that of rhythm, when in 1948 Pierre Schaeffer put together his “Railway Study.”

NOMINAL CENTRE FREQUENCY 2, 3, 5, 8 Kc/s
ACTUAL CENTRE FREQUENCY 1.96, 3.02, 4.84, 8.39 Kc/s
CURVE SHAPES AS SHOWN ± 0.1 dB AT ANY SETTING



Response curves for the E.M.I. Standard Passive Tone Control Unit (mid-lift). (Reproduced by courtesy of E.M.I.)

He constructed it with immense labour, not on tape (which was not at the time conveniently available) but on disc, using locked groove to provide rhythmic repetitions. The effect is very much the same as may be obtained with tape loops, where the joint provides, as it were, the bar lines. But with disc the dubbing and editing must have been more of a struggle—and with the amount of this involved, hardly likely to produce a result of high technical quality.

Later, melodic elements were brought under control to a much greater degree by means of a device with a piano type of keyboard. On this instrument each key served to engage its own individual capstan, one of a series located round a tape loop. The rhythmic element was of course lost for most such transformations and had to be restored by dubbing and cutting. And with this advance in technique there came many further complications—which any amateur can easily discover for himself. (I shall be returning in my next article to the subject of the limitations imposed, and new freedom allowed by this sort of work.)

One of the most immediately engaging compositions that I have heard is an item about two minutes long called “*Bidule en Ut*”—whose title implies the use of a “do-re-mi” scale. I have heard two versions of this work (both, of course, from the same original) one of which was in a presentation album pressed by the experimental group which has sponsored most of this type of work in France.

The other version was one that was issued on a gramophone record. And an odd thing about this second version is that its pitch (and therefore duration) is different; and the title has also been changed slightly in translation to become “Trifle in C.” If

SHAPING SOUND-2:

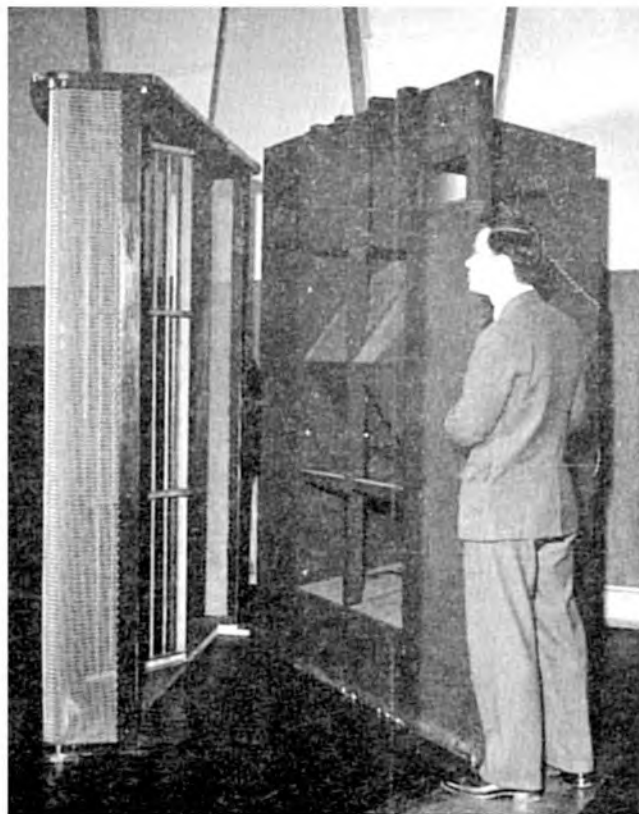
CONCRETE

AND

“POP”

(BBC photograph)

The author with the loudspeaker that is used for the BBC's colour tone organ (with the decorative grill removed). This is one of the many sound sources available to the Radio phonic Workshop



this story has a moral, it must surely be that if you finally decide that you don't like the key you started out in, you can change the whole thing after the recording has been made to a completely different pitch. And it will subsequently be impossible to tell which is the original and which the translation.

In the meantime other works had been produced, some of which exploited the emotional associations of the original sounds very successfully. I recall that when Ducretet-Thompson (in co-operation with U.N.E.S.C.O.) published the record which contains "Symphonie pour un homme seul" one music critic rang me up, very annoyed indeed about one of the movements from this work (it was based on a *cri d'amour* by a French actress) which was so evocative in its musical arrangement and repetition that the critic asked me if I didn't think something should be done about it; and didn't I think it was disquieting that U.N.E.S.C.O. should sponsor pornography?

Much of the later work in *musique concrète* has been done using musical sound sources—and this is perhaps the point of contact with the commercial big brother of *musique concrète*: "Pop" music with the "modern" sound.

In this other music one or two of the techniques of *musique concrète* have been borrowed and applied, usually in a simplified but emphasised form, as gimmicks. But the main type of treatment (one that has been used very widely indeed) is distortion

of the frequency spectrum. And this is applied not to the final sound but individually to each separate source.

In the "pop" recording studio, every instrument, soloist or vocal group has its own appropriate microphone—which is not necessarily chosen for the smoothness of its response: in fact a certain amount of irregularity in the top response will give some instruments extra presence. But what is more important about his multi-microphone technique is that a very tight balance can be used in order to avoid spill. Ribbons are not generally considered ideal for these purposes.

Each circuit (including echo return) of the multi-microphone mix has its own controls for supplying selected degrees of bass, treble, and intermediate frequency band boost. Bass or treble may be emphasised on one instrument and not on another, as the balancer feels necessary. But I think that the most interesting part of this arrangement is the "mid-lift", a facility for introducing a deliberate peak into the middle top. On E.M.I. mixing equipment two switches are used: one selects a frequency of 2, 3, 5 or 8 thousand cps and the other applies a boost of up to 10 dB at that frequency.

Now the characters of the various musical instruments are partly governed by the way that the harmonics which are produced are emphasised in some regions of the sound spectrum and diminished in others; the way in which this happens depends on the mechanical structure of each instrument. Thus a violin will not sound like a cello even when both are playing the same note—because the geometry of the instrument gives a different envelope to the harmonics.

What "frequency correction" (as it is

called) can do, is to select a region where harmonics are strong for any particular instrument, and emphasise this. The result will be to bring out the essence of that instrument. This will give a caricature rather than a true likeness, to be sure; but then, that is the whole point of the exercise. For if this sound is then combined with others which have had peaks produced in different regions, the final effect will have a striking degree of clarity and separation, as well as brilliance and firm bass.

Perhaps this will explain why most of the music you hear from the juke boxes of today is to the recording of serious music as the cartoon is to the portrait in oils; or to put it another and perhaps more flattering way, one might say that the protagonists of this type of balance are the Picassos of popular music.

But whatever you think of this type of music, you will probably agree that within its own narrow field, its aims and methods are both valid. And the results are certainly successful enough.

At the present time, in the field of popular music, the BBC does not go to anything like these lengths to create a "modern" sound; and so the demand for it is largely met from gramophone records—broadcast with nothing added, and nothing taken away . . . except perhaps a little of the available volume.

And the reason for that one slight restriction is that, broadcast full blast, it would be impossible to balance them with announcements of normal speech or more conventional music which may be in the same programme.

For sheer loudness there's nothing to beat "pop."

BUILDING A STEREO MIXER

H. Burrell-Hadden
concludes his
learn-as-you-make
series

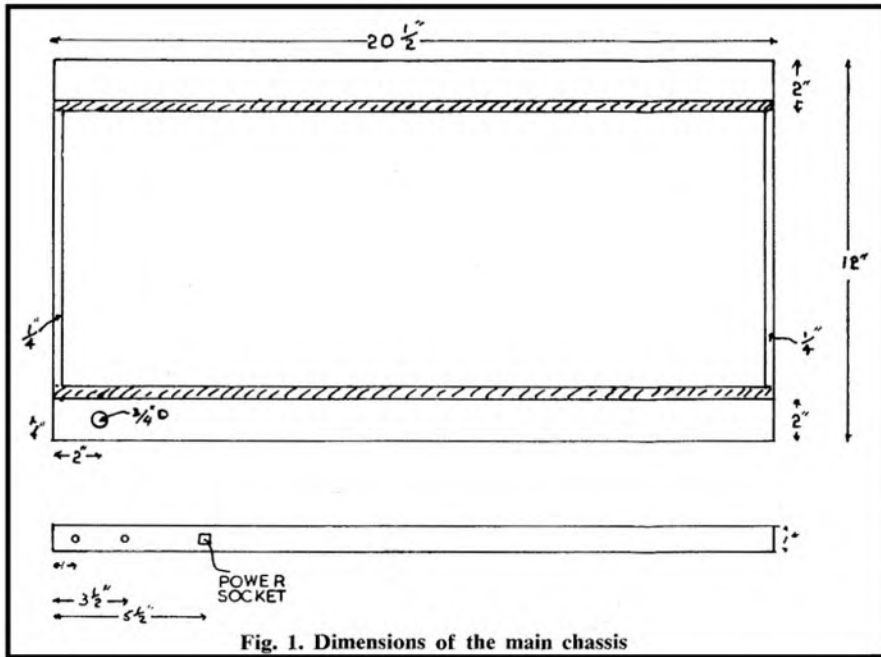


Fig. 1. Dimensions of the main chassis

WE have now completed the design and construction of all the individual units which together make our stereo mixer, and all that remains is to show how these are assembled into a complete equipment. This assembly will, of course, include the control panel, on which are mounted the four-channel faders, two for stereo and two for monophonic "spot" channels, and the main gain control; as well as all the various pre-set controls necessary for the operation of the equipment.

The seven units, two for each stereophonic channel, one for each spot channel, and one mixing unit, are mounted on a main chassis, which would better be described as a frame, made from aluminium. The dimensions of this frame are as shown in Fig. 1, and it will be seen that space is provided for the cathode follower output stage.

These seven units are not mounted

rigidly to the frame, but are isolated from it, and from each other, both mechanically and electrically, by two lengths of sponge rubber strip. This provides some measure of shock absorption, and also ensures that earthing of each unit can be made in such a way that no earth loops occur, which might give rise to trouble from hum.

The rubber strips are fixed to the frame by means of a suitable adhesive, and each unit is fixed to the rubber in the same way, care being taken that the units do not touch each other or the frame.

All input connections, and the two outputs, are taken to sockets along the rear edge of the main frame, as are also the connections for power supplies. No input sockets are specified, since they will depend on the various inputs required.

In the author's model, the stereo channels are arranged one having balanced inputs for a low impedance microphone, and the other unbalanced at high impedance; the two spot channels are both at high impedance. For a similar reason no input transformers are specified, for the low impedance input, since these will depend on the microphones to be used.

pre-amplifier units to accommodate the modern small microphone transformer. The output sockets can conveniently be of the co-axial type and the power supply connector a four pin unit of the "Jones" type.

All the variable controls, both pre-set and knob operated, are mounted on a sub panel attached to the main frame and the dimensions of this panel are shown in Fig. 2. Bracing pieces of angle aluminium from the top edge of the panel to the rear of the main frame improve rigidity.

The positions of the various controls on the panel are shown in Fig. 3. All connections to the controls from the seven units are made to the small tag strips mounted on the top of the front end of the units, and these tag strips also carry the power supply connections for their respective units.

The power supply feed is wired to these, the wiring carefully laid and tied in a cable form, and the lead across to the power socket at the rear of the main frame is taken through the hole at the mixer end of the front of the frame and along the side edge of the frame, to the rear edge.

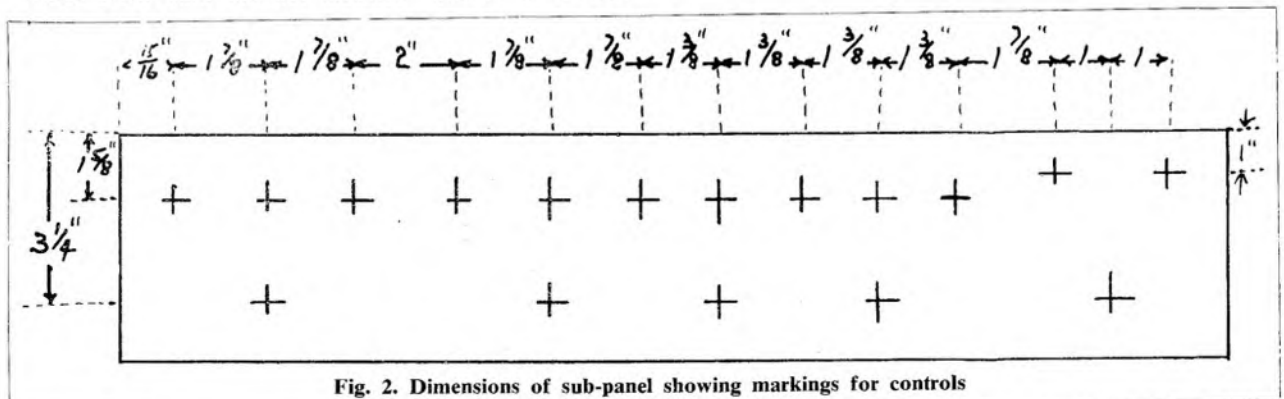


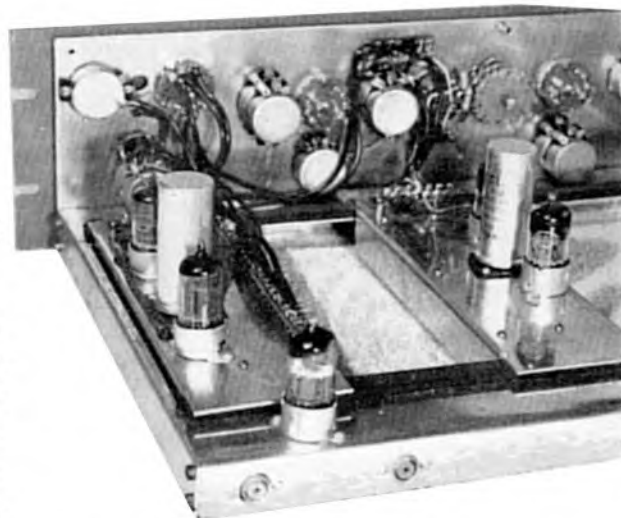
Fig. 2. Dimensions of sub-panel showing markings for controls

BUILDING A STEREO MIXER

PREVIOUS INSTALMENTS

Deciding the requirements	October 19
Use of a monophonic microphone in stereo	November 16
Breakdown of component parts	December 14
Circuit design of mic pre-amp. stages	January 25
Construction of mic pre-amp. and mixer sub-unit	February 22
Final check-up before assembly	March 22

These issues are available, price 2s., from Back Numbers, 7, Tudor Street, London, E.C.4.



View of mixer and one "spot" channel during assembly

The programme leads to the output stages are taken through a second hole, then between the mixer and nearest "spot" unit. All screened leads should be earthed at one end only, the end on the unit concerned, the leads to the output stage being earthed at the output stage end. This again is to guard against the formation of earth loops.

The main front panel, 22½ x 5¼ inches, drilled to take the control spindles, mounts on the front of the sub-panel with half-inch spacing pieces.

No mention has so far been made of the width control attenuator for the stereophonic channels. The circuit of this is shown in Fig. 4.

The circuit of the twin cathode follower output stage is shown in Fig. 5a, with its wiring diagram in Fig. 5b. The valve used here is the ECC 85 which has a screen between the two halves, helping to preserve the separation between the two halves of the stereo output.

The circuit of a suitable power supply is shown in Fig. 6.

The H.T. requirement is quite modest and a 50 m.A. supply will be more than adequate, but it may be difficult to find a mains transformer with this small H.T. rating having large enough heater winding. The large number of valves necessitates a supply of 4.5A. at 6.3 volts.

Having completed the assembly of all

the component parts of the complete mixer, the next step is the setting up of all the controls.

First of all it would be wise to check all connections and make sure that no short circuits exist on any of the power supplies. Having made certain that all is well, the procedure is as follows.

A source of audio frequency is necessary, and this can either be an audio frequency generator or some radio programme. If the latter is chosen, male speech would be most suitable, although any type of programme could be used. Next the two outputs of the mixer should be connected via suitable amplifiers to a stereophonic pair of loud speakers.

The stereophonic channels should be checked first. The source of audio is connected to the inputs of both channels connected temporarily in parallel, and

the setting up switch on the mixer stage switched to "A-B".

The gain setting control on the pre-amplifier should be set to minimum gain, and the width control to the centre position.

Since we have made the input signals A and B equal (they are identical), then if the two microphone amplifiers are balanced, no output should result. In all probability, some output will be heard, but it should be possible to reduce this to a clear minimum by means of the

(Continued on page 23)

Fig. 4 (right): Circuit for width control attenuator for stereophonic channels

Parts List:

Switch 2-pole 11-way (2 wafers)	
R1 180K	R7 180K
R2 180K	R8 180K
R3 120K	R9 120K
R4 220K	R10 120K
R5 180K	R11 390K
R6 100K	

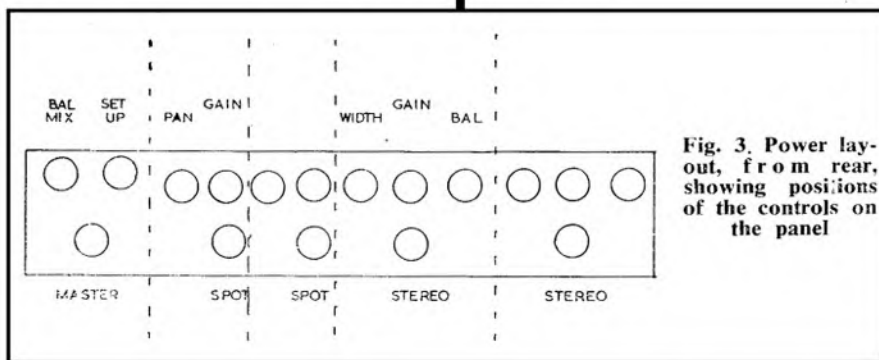
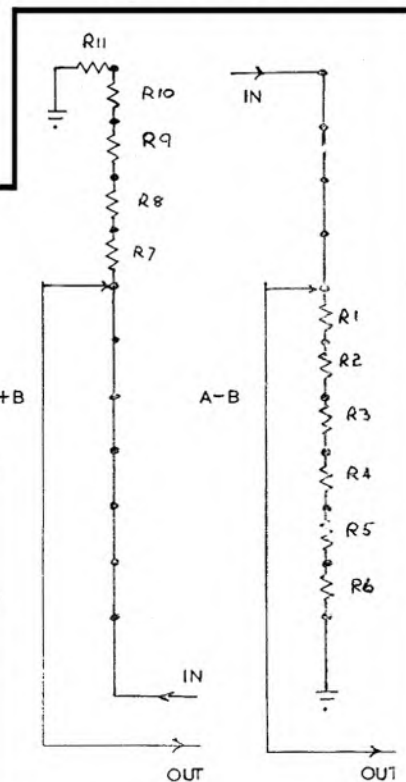


Fig. 3. Power layout, from rear, showing positions of the controls on the panel

Trying out speakers for stereo

SPEAKER placing is one of the aspects of stereo that make all the difference between complete success and something half-way between success and failure.

The answer is to experiment; but although this advice is handed out readily from all quarters, I am quite sure that what really matters is what people understand by "experiment," how persevering they are at it, and the way they set about it.

An occupational disease of experts is their failure to estimate the number of possible wrong ways there are of doing a thing. They are like natives of a town who give very brief directions coupled with the assurance that "you can't go wrong." But you can, and you do.

Questions I am asked by readers indicate a lot of wrong approaches—which are perfectly understandable when we remember that many people who are very anxious to have first-class sound reproduction in their homes have never given much thought to technicalities. And the trouble is that many hours of experiment can be devoted to trying the wrong things—and the stereo owner may eventually feel that he has done all that is expected of him and settle for something less than the best possible.

The ideal solution is to buy from an experienced dealer who will help to install the equipment in your

Stereo Notes

By D. W. GARDNER

home. He may not have time to "ring all the changes," but his methods of trying out will, if he knows what he is doing, indicate the lines you should follow.

A few general rules may help you to spend your experimental time productively.

Disabuse yourself of the notion that spreading the sound waves must make good stereo better stereo. It may seem logical to think that since stereo is a broad effect anything that helps to produce a broad effect must be helpful. The fact is that true stereo is produced by the reception of a clear, direct signal from each speaker. Broad waves reflected from walls and other surfaces only confuse the ears and prevent the directional faculties of the brain from functioning properly.

Beware, especially, of reflections from areas near to the speaker itself, since these are the most confusing. The brain, when assessing direction, seems to be able to discount reflections that are well wide of the mark.

Corners are excellent for a single speaker but they are not normally

very good for stereo. Do not rule the corners out completely, however, as a good deal depends on the radial pattern of the loudspeaker and the general surroundings.

If a speaker is tried out rather close to a corner it is a good idea to hang a blanket or curtain on the return wall. This enables you to judge what is really happening, instead of dismissing the position as unsuitable. You may eventually be able to introduce a portable sound absorbing screen, or a curtain on runners, if you find that the arrangement is a happy one.

Always treat forward facing speakers strictly as a pair; that is, if you change the angle of one see that the other one is given the same angle. Do not forget to try them perfectly horizontal, but facing outwards is a waste of time as far as modern recordings are concerned.

Make a plan of the room and indicate on it the positions that seem to give the best results—pretty well regardless, in the first instance, of the usual furnishing arrangements and the question of where you would like to sit when listening.

At the outset your object should be to learn what your equipment is capable of doing *at its best*. You will then be in a position to judge whether or not some furnishing changes might be worth while.

STUZZI CONTEST

Another B.B.C. personality joins judges panel

THERE are just fourteen days left in which to complete and to submit "holiday postcard" tapes for the contest sponsored by Recording Devices Ltd., in association with *Tape Recording Fortnightly*.

Closing date is May 31.

All entries will then be passed to the panel of judges, who are now joined by one of radio's most distinguished commentators and correspondents, Wynford Vaughan Thomas. With him will sit Elizabeth Cowley, Producer on the BBC "Tonight" team, the Managing Director of Recording Devices Ltd., and the Editor of *Tape Recording Fortnightly*.

They will decide who is to get the prize of one week's holiday in Paris, with all travel and hotel expenses paid for, by Recording Devices Ltd.

This is a chance that no enthusiastic recording enthusiast can afford to miss.

All you have to do is to make a tape, not exceeding five minutes' duration, in the form of a "postcard-in-sound" message from a favourite holiday spot. You can record it anywhere, of course, using your ingenuity and skill to create the sounds you want. But you **MUST** include at least two of the following: Sounds of departure on holiday by land, sea or air; Church bells or public clock striking, indicative of locality; "Atmosphere" sounds (market cries, etc.); and typical outdoor sounds of city, country or seaside life.

Entries should be addressed to: "Paris Holiday Contest" *Tape Recording Fortnightly*, 7, Tudor Street, London, E.C.4, and must be received by Wednesday, May 31.



BUILDING A STEREO MIXER

(Continued from page 21)



Complete stereo mixer described in this series

balancing control on the pre-amplifier. It will probably not be possible to balance for complete cancellation, but a good minimum should be achieved. This process should then be repeated with the second stereophonic channel.

The mixer stage must now be balanced, and in order to do this the audio input is fed to one side only of the microphone pre-amplifier, and the input to the other channel shorted to earth. If the "A" side only is fed, "(A-B)" and "(A+B)" will be equal, since "B" is zero, and so the mixer stage will be fed with two identical inputs.

If the setting up switch is now thrown to "stereo" then if the mixer is balanced no signal should appear from the "B" channel. The balance control on the mixer should therefore be adjusted for a minimum from the "B" side, which should coincide with a maximum on the "A" side. The mixer stage should now be correctly set up.

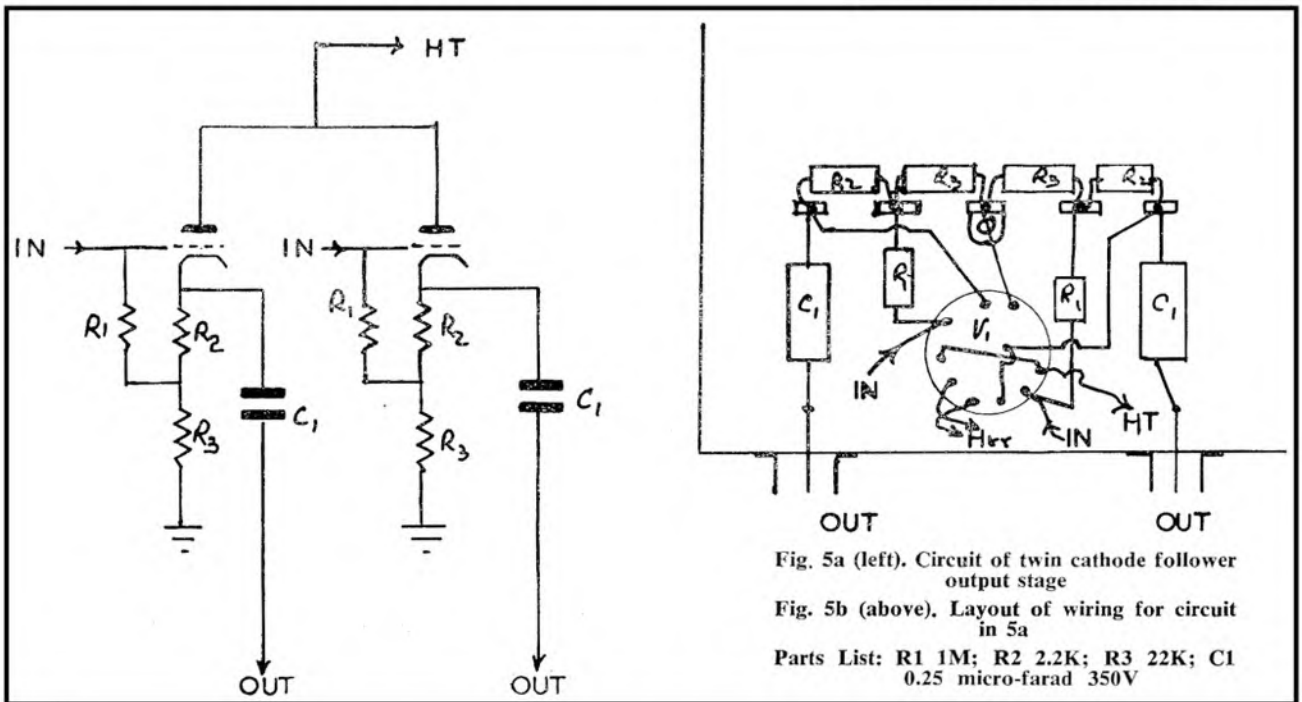
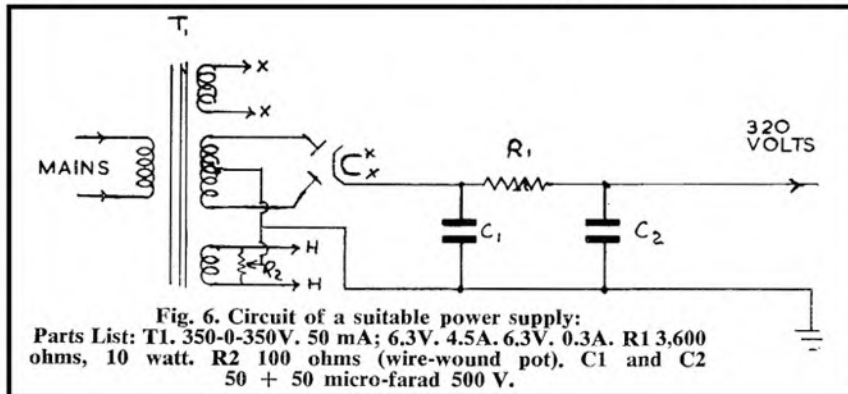
The "spot" channels should now be

checked, and if they are working correctly a single input should produce an image which can be moved from A to B loudspeakers by means of the "pan pot."

This setting up procedure, one accomplished, should be learnt by heart, since it is necessary to perform it every time the mixer is used, if best results are to be obtained. In practical use, however, the audio source would be the microphone pair, and the pre-amplifier inputs would not be paralleled, but the two halves of the microphone used. In order to ensure both halves of the microphone receive the same signal they should be turned to face the same, and not set at 90 degrees as they would be for stereo pickup.

By using the microphone for setting up in this way, any differences in microphone output are also compensated for in the balancing process. The microphone pair must be returned to the 90 degree setting before use.

It is hoped that the completed equipment will give many hours of pleasure to those readers who have tackled the somewhat formidable task of building this fairly complicated piece of apparatus.



WHEN the tape recorder first burst upon the market—not really so long ago as it seems—the average radio mechanic stood back and eyed it suspiciously.

“Just another gimmick,” you might have heard him mutter, “toy for moneyed teenagers.” Having had his share of cheap, and often nasty, record players, he was treating the newcomer with contempt.

The idea of any sane adult wanting to hear his own stumbling phrases, or the children’s party piece made more unintelligible by breathy exhalations at the mike, the long, painful silences while “the missus” struggled for remarks in a manner so foreign to her normal loquacity that the machine was inevitably blamed, the barking of the dog, the chirp and chatter of an unquenchable budgie, all capped by a rising howl of inadvertent feedback . . . the idea was preposterous.

But, in course of time, the long-suffering serviceman learned that the tape recorder had come to stay. He could no longer treat its presence on his bench as an unwarrantable intrusion. Indeed, many firms have organised specialist sections to deal with the tape recorder alone. The Sits. Vac. column of the trade magazine now contains such terms as, “Radio, TV and Tape Recorder engineer.”

HOW DO THE AMATEUR ENTHUSIASTS LOOK TO THE MEN BEHIND THE COUNTER?

A service engineer’s view . . .

This character has had to re-orientate. Mechanical matters have long been beneath him. He spurned anything less electronic than the repairing of a dial drive cord. It was all he could do to remove the back of the radio or television receiver and tap the valves to find a simple fault. All the rest, he would tell you, nonchalantly waving a meter prod, was brain work.

Now he finds that matters mechanical assume overwhelming importance. Speeds and pressures are even more vital than on the record players that he barely deigned to handle. Rods and levers and

cams and bearings make a difference to the ultimate sound; not just to the running, for a naked eye inspection is pretty useless for detecting flutter and wow. And, to add to his discomfort, it is seldom possible to get at the “innards” without removing the deck. So the valves have to go untapped—and are probably the better for it.

From this the tape enthusiast may deduce that his machine is regarded as something of a menace by the repair mechanic. Not so! The good engineer regards the tape recorder as a challenge. Any fool can bring an amplifying circuit up to standard—given time, the spare parts and a circuit, he says. But the pleasure of watching a mechanical contraption working perfectly after repair has no parallel.

Nevertheless, he still has his quota of needless trivia—especially the outside mechanic, the man in the field.

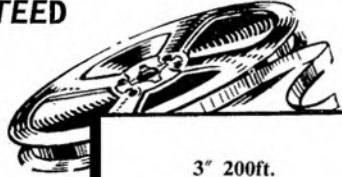
He receives complaints of low output, for example, and finds the tape threaded in reverse. Or distortion, caused by a layer of dirt on the heads so thick that the wonder is the magnetic field reached the gap at all.

Quite as frequent is the complaint: “This machine breaks the tape.” Sure it does, when the customer persists in playing the keys like an old-fashioned organola, or turning the operational

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Available from: 7, TUDOR ST., LONDON, E.C.4.

HOW DO THE AMATEUR ENTHUSIASTS LOOK TO THE MEN BEHIND THE COUNTER?

switch in the sequence not intended by the makers.

Another pet fault is the slipped or broken drive belt. Nine times out of ten this happens because the speed change was engaged at the wrong time. There are two main methods—one requires that speed change shall only be done with the motor working; the other, vice versa. Makers' instructions are usually explicit, but, no matter, these "function faults" still occupy us. And, of course, when the engineer arrives, the customer innocently swears he didn't touch it.

In the experience of many servicemen, the tape recorder user is not getting the best from his instrument. Even the cheapest machines are of incomparably better quality than, for example, the older types of "cheap" radios. Properly used and cared for, they are capable of better than they are usually asked to give.

Quite apart from the waste of tape on idle conversation, the unimaginative "Testing, testing, One . . . Two . . . Three . . ." and the "er's" and "um's" of the beginner, there is the problem of music. So much recording appears to be done by a microphone placed before the loudspeaker of a radio set that one despairs of ever educating the customer.

All it needs is a lead correctly matched into the output of the detector circuit, or even across the loudspeaker coil, and the mechanical snags of the two transducers are cut out. As is also the inadvertent crash when junior comes dashing from the garden.

Again, the question of output never seems to interest the recorder owner. (Not you, dear reader, the average chap I mean). Sell him a radio or radiogram and he will vacillate for hours on the choice of a loudspeaker with a good response, or will order the best of extensions under the impression he is simulating stereo. But his tape recorder is allowed to blast away happily, with no thoughts of the possible improvement.

The point is that the tape recorder is designed as something of a compromise. It usually has to be portable—although some models advertised as such need a caravan to help them travel. Therefore, it has to have a built-in loudspeaker.

However well the manufacturer has designed the machine, and whatever the loudspeaker he has used, it can never achieve results comparable to an independent unit in a properly constructed baffle. All it needs, usually, is the hooking up of an extension loudspeaker remote from the machine, then the muting of the internal speaker, except for monitoring purposes, and you are one more step up the hi-fi ladder.

These things, as I have said, are a challenge to the engineer. From being a nuisance to him, dragging him away from his oscilloscope and the tricky timebase fault, the tape recorder has become an important part of his repair repertoire. Something worth studying; something worth owning; something worth mending when the darn thing goes wrong!

..... The experiences of a salesman

SO you want to buy hi-fi and tape-recording equipment? I shall be delighted to serve you—but I just hope that I am the one that serves you! You really do need leading by the hand.

For the sake of argument, let's say that you need a tape-deck, amplifier, turntable and extension speaker.

Begin with the tape-deck. So it's a bargain price—ever thought *why* it

**Here is another view—
by a man who has one
foot on each side of the
counter! Not surpris-
ingly, the author wishes
to remain anonymous.**

should be? Model A was damaged in a warehouse fire, and had several parts replaced, and a lot were 110 volts—unmarked! Model B has more faults than a burned-out satellite. The brakes are TOO good, switching is poor, heads out of line, motors burn out rapidly, and a few other defects.

Okay, you lose your wool and bring it back. My job: to smooth your ruffled feathers and give you the impression of rapid servicing.

You'll wait at least four weeks, and the deck won't be much better after that.

Amplifier next. When you suggest one, avoid the one name that I slam back immediately. We're trying to get rid of them, because they're lousy value. Of course we haven't got one on demonstration—think we want to lose sales?

Your turntable? Forget the bargain prices, forget the gimmicks that it has, and look for a *real* name. You'll pay more for it, but it's still cheaper in the end.

The same applies to the speaker; do you *really* and truly believe that you can get a 12-in full-range, high-fidelity, hand-built speaker for five pounds? Of course you do; I sold three today!

When a really keen type comes to me, I try to spend as much time as I can with

him, find out what he wants, and give him the gen stuff. I've spent too much time on your side of the counter.

When you want this stuff, don't go on your own. Try to find a friend who knows his hi-fi to go with you.

If you don't know the name of an item offered, refuse it until you can find out if it's a good brand or have it demonstrated. Insist on have a demonstration anyway, if it's valuable equipment.

What kind of guarantee are you getting? Get it in writing; don't just take my word for it.

What will your after-sales service be like? Get that in writing, too.

Never say how much money you've got to spend, or are ready to spend. Find out *why* it's less than list price.

Never trust the salesman who can't handle the equipment he's selling. Don't pay any attention to a "tape that was actually recorded on this machine, sir." It was probably a piece of a professional tape, or recorded on far superior machines to the one that you hear it on. They all play back pretty well!

After reading this, don't come into the shop looking for trouble. If you do, you'll get it. Treat the salesman as a friend.

When something goes haywire, and you don't like the service you get, it's no use threatening us with court actions. We laugh at you, because you haven't got a leg to stand on unless you have something in writing.

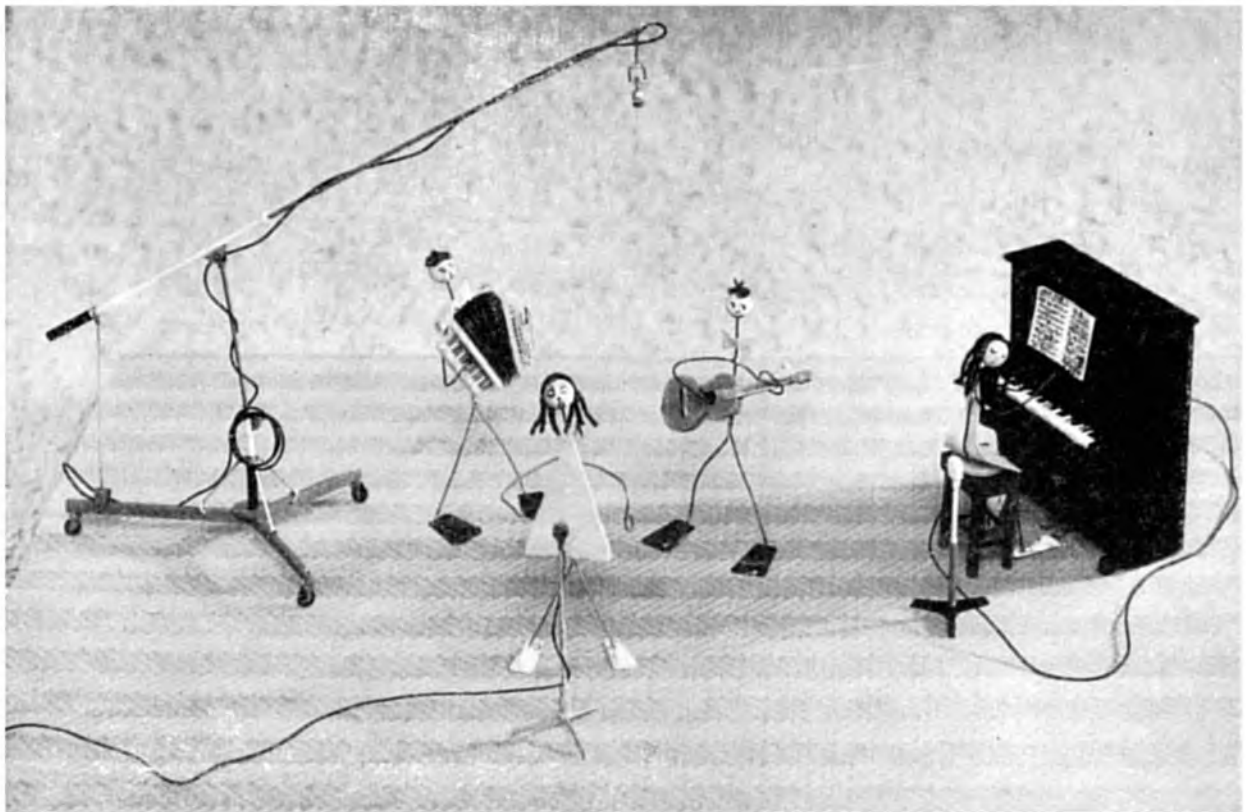
If you *are* fairly knowledgeable, don't blaze it about, because you may present an irresistible target. When you decide to buy new gear, ask in a shop about it, but don't buy it right away. Find out a bit about the names that are recommended—if they are really interested, they will always give you a little time to answer your questions.

Some readers of this magazine have discussed tape prices. You just don't know *how* much they could be reduced. Let manufacturers give exact price figures, showing who gets how much.

Then there are the "cut-price" tapes—cut-price my foot! They're made to that price. You'll find drop-out right, left, and centre. The frequency response won't even hit low-fi requirements, and it's as brittle as hell.

Of course, there *are* bargains about, but precious few. *We're* not sharks—it's just that *you* are too simple to be true.

Why have I written this? Because even I can't go on at the rate I've been going. I'm getting out of it. I've learned enough to get the good stuff each time—so why don't you?



ALONGSIDE the advancing modern musical trend there appears an increasing general interest in original folk lore, despite the modesty of the accomplished musicians whose folk music is performed for joy rather than publicity. Their capacity for seeking out the hitherto forgotten legends and combining these with their own musical interpretations seems to add a flavour which rates of great value to the recordist collector.

The results of the recording in this case are perhaps of lesser importance to the folk performers, in whose opinion nothing can substitute the warmth and friendly atmosphere of a folk gathering or "Ceildh" where spontaneity is the keynote, than they are to the recordist who will have only his own inclinations to satisfy. However, bearing in mind that any member of the Ceildh is likely to contribute his piece when the mood takes him, such a performance can prove a real stretcher of ingenuity as far as the microphone technique is concerned.

What is the best method of coping with, shall we say, a "one-man-band" in the far corner of the hall, when at the next instant, a fiddler and guitarist strike up at the opposite end, while a Scottish reel and piper will then command the centre floor? Short of stalactic microphone formations and an army of assistants, I would suggest that some kind of

NAOMI ARCHER uses models to represent problems of microphone placing for the sixth article of an entirely novel series designed to create, describe and offer advice on microphone technique.

long-reach boom is a useful asset, supplemented by one or two microphone floor stands and a couple of assistants who are able to re-position microphones at the direction of the recordist.

But let us concentrate on the requirements of the actual performances.

Depicted above is a hypothetical example of a group singing a negro lullaby. The girl vocalist should naturally figure in the foreground while the lofty microphone will impart depth to the male backing both vocal and instrumental. The piano accompaniment has a close microphone and is brought-in well below the lullaby soloist except for the musical interjections. Dexterity in getting the microphone closer to the weaker instruments is necessary where it is used to cover two or more contributions each with differing measures of loudness.

To avoid putting the cart before the horse, perhaps it is timely to mention something of the science of microphone placing.

It is factually impossible to compare the microphone with the complex direction-finding network of the human ear, which is capable of hearing the creak amidst the thunder, so to speak, and is, therefore, highly selective of whatever the listener seeks to concentrate on.

The microphone will sense noise equally in directions according to its pattern and the relative sound levels, and it is purely for the purpose of attempting to simulate the binaural effect that microphone positions are so critically selected. The mixer alone cannot be made to compensate for a poorly-placed microphone.

Such a group as that illustrated might well provide the accompaniment to a dancing set, and because the true folk movement tends to avoid glitter and glamour, these events often take place in village halls where the floors are unsupported and springy.

Microphone stands absorbent enough to deal with this situation are very clumsy and probably not the sort of equipment that the amateur recordist would feel obliged to transport. The all-round answer might be found with a moderately-cushioned stand and a moving-coil or condenser microphone. Where ribbon microphones are desirable, then the cross-arm stand or boom, similar to the one modelled, provides an adequate solution.

Fortunate, indeed, is the recordist who can secure a vantage position at the Ceildh where there is a good view of all that is happening on the wide floor, for then on playback he will be able to apply the sound to a colourful picture.

Equipment Under Test

STELLAPHONE

ST 455

By C. T. Heinlein



THE Stellaphone 455, made in Holland, is a three-speed, four-track unit using normal stacked heads. The main points taken from the manufacturer's specifications, are as follows:—

Tape speeds and frequency responses: $7\frac{1}{2}$ ips, 50-20,000 cps; $3\frac{1}{2}$ ips, 50-15,000 cps; and $1\frac{1}{8}$ ips, 50-7,000 cps.

Two input sockets are incorporated. These are for radio (200 millivolts) and microphone (2.5 millivolts), and both are situated on the top of the deck.

Output sockets are provided for external loudspeaker, playback to external amplifier (1.5 volt RMS), headphones for monitoring, and stereo.

This latter feature is provided by a connection to the record/playback head to enable stereo recordings to be played by means of a separate external amplifier chain.

The valve line-up includes one EF86, ECC83, ECL82, EM81 and an EZ80.

A dynamic microphone with a variable bass cut is provided. A copy of the printed response curve supplied with the microphone is shown in Fig. 1. The effect of this bass cut is clearly shown.

It is necessary to carry the microphone separately when transporting the recorder since there is no room to pack it in the pouch provided in the lid, the clearance between it and

the tape deck being only adequate to house the two connecting cables supplied.

Facilities for superimposing further recordings on already recorded tape are available, and these work satisfactorily. The original test recording was reduced in volume by about 10 dB when the "superimposing" switch is operated.

It was found that the input levels were substantially the same as those stated by the manufacturer, the actual level required by the radio input socket to just close the level indicator being .25 volts. The recording level indicator is one of the older magic-eye types, where the "V" closes together on maximum modulation.

The record/playback response curves at all three speeds are shown in Fig. 2. These were taken by feeding the signal into the radio input socket during recording and subsequently obtaining the output from the socket intended for feeding an external amplifier during playback. The tone control was set for minimum treble cut, and the signal adjusted to just close the indicator, a check being made before the test began to ensure that

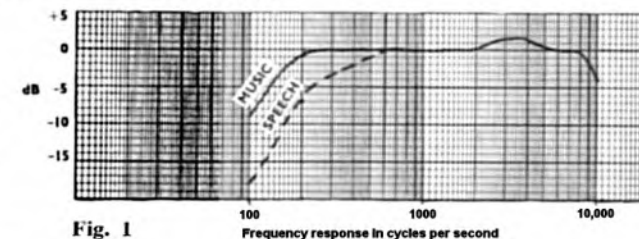


Fig. 1

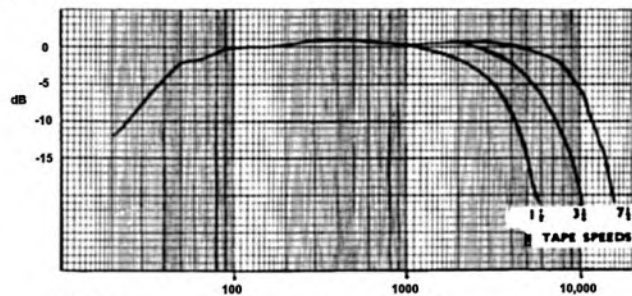


Fig. 2

Frequency response in cycles per second

neither the tape nor the amplifier were being overloaded at this input level.

The response of both heads was substantially the same, so only one curve is shown for each speed; there was,

however, a difference of about 3 dB between the overall record/playback sensitivities of the two units.

The frequency response is what one would normally expect at the speeds concerned and it seems a pity therefore that the publicity writers should try to enhance a reasonable tape recorder by leading one to expect frequency response wonders which seldom materialise in normal production.

The Stellaphone 455 is housed in a well-made case measuring $16\frac{1}{2} \times 14\frac{1}{4} \times 7\frac{1}{2}$ in.; the unit weighs 30 lb., and is priced at 59 guineas—in my view a rather high price for a recorder of these specifications.

Manufacturer's Specification

- Speeds: $7\frac{1}{2}$, $3\frac{1}{2}$, $1\frac{1}{8}$ ips.
- Rewind time: Three minutes for 1,800 ft.
- Frequency response: 50-20,000 cps at $7\frac{1}{2}$ ips.
- Signal-to-noise ratio: Better than 40 dB.
- Wow and flutter: Less than .2 per cent at $7\frac{1}{2}$ ips.
- Loudspeaker: Five-inch.
- Power output: $2\frac{1}{2}$ watts.
- Maximum spool size: Seven inches.
- Inputs: Microphone (2.5 mV 100 K ohms 3-pole plug), radio, pick-up (200 mV 1M ohm 2-pole plug).
- Dimensions: $16\frac{1}{2} \times 14\frac{1}{4} \times 7\frac{1}{2}$ inches.
- Weight: 30 lbs.
- Makers: Stella Radio and Television Ltd., Astra House, 121/3, Shaftesbury Avenue, London, W.C.2.

Why is American tape cheaper than ours?

MR. A. CAMPBELL GIFFORD states that "there is no comparison between the cost of tape here and in the U.S.A.," but he does not tell us why. If the lower price over there is due to fall in demand, this gives a useful hint to recordists in this country; but later in his letter, Mr. Gifford points out that the main items in the cost of tape are labour and raw materials. I can only say once more that in the U.S.A. the cost of labour vastly exceeds ours but, nevertheless, the price is much lower.

It is true that at the moment buyers "suspect the cut-price item"; and they are not always wrong, unfortunately. Recently a friend and I bought a reel of cheap tape from the same source and paid the same price; but the tape we got was quite different, and mine was a good deal better than his. Further, any intelligent recordist knows that not all tapes will suit his machine, and wishes to buy a particular brand, not just "famous make" or "highest quality"—even where those epithets are quite justified, as they often are.

Now, the fact is that the threatened confusion of standards over here is linked to the cost of tape, since the only advantage of multiple tracks is economy—as it is of slower speeds.

Until a short time ago, we were content over here with twin-tracks and CCIR. Now we are being stamped by

an advertising campaign into the acceptance of things which are, without exception, likely to lead, not only to confusion, but to degradation of recording standards. As Mr. Percy Wilson points out at length and with authority in the current *Gramophone*, slower speeds, narrow-gap heads and narrow-width tracks all add their complement of problems to the designer and manufacturer.

It is only common sense to conclude that, unless the price of recorders is raised considerably, standards are bound to fall, since what can be done reasonably with a twin-track deck running at $7\frac{1}{2}$ ips is so much harder to achieve at $3\frac{3}{4}$ ips on a multi-track machine.

As to the retail profit margin, Mr. Gifford must know that there are many retail lines on which profits are a great deal less than 25 per cent. But people *do* make a living selling beer, tobacco and petrol, provided that they sell enough. The same is true of recording tape.

Finally, permit me to assure Mr. Gifford that no "pop" music-planner will ever shape the sound of the music to which I listen: for if they drive good music out of existence, one can always listen to none. And if we tape recordists were adequately organised, we could demand the kind of machine we want, and not put up with the rubbish which is being churned out at the moment by

STRICTLY FOR THE BIRDS

I WAS very interested in the article "DO BIRDS TALK?" by Thomas Sutton (April 19 issue), and would like to put forward some of my own experiences in this line.

Recently I have been wakened at the unearthly hour of 5 or 6 a.m. by a persistent blackbird in the back garden. This bird first wakes me up with lusty song and then prevents me from getting back to sleep by an unending stream of chorus's which are taken up and responded to by the lesser birds (in terms of sound volume).

After this reveille had been taking place for some ten continuous days I decided to admit defeat and make the extra effort in staggering across the bedroom to the recorder.

At a much more civilised time of the afternoon I played back my twenty-minute recording of the dawn chorus, noticing in passing that the blackbird was again perched on top of the nearby telegraph pole. This time he listened to my recording which included the mad

chirping of my budgie who bursts into tune at first signs of bird song.

The strange thing is that since that afternoon's playback of the dawn chorus I have not been troubled with the loud singing in the early mornings.

It may be that the blackbird thinks that we have sufficient "coverage" in our house, and has sought a new site for his singing, or that he was so put off by the playback of his early morning song message breaking the afternoon peace that he has given up the locality for the time.

Taking the theme to its logical conclusion, I would have to get the recorder sited in the garden and arrange a playback timed to forestall the actual dawn chorus by some 30 minutes and stand back and observe the results on the other birds.

I wonder is there a reader who owns a stereo set-up that is sufficiently wide-awake in the early morning to record and play back a dawn chorus—strictly for the birds?

ROBERT COOTE.

London, S.E.3.

Have you an idea, a complaint, or a bouquet to hand out?
Write to us about it. Letters not for publication should
be clearly marked.

Letters to the Editor

all but a very few manufacturers. A new machine which I received early this year was faulty, and was replaced by another (which I believe was the same one repaired). This would not work on arrival, and I sent it straight back. It came to me a third time, working at last; but has broken again after a few weeks' use. I have now returned it to the dealer, who is refunding my money. One hears similar stories from all over the place; and we badly need an independent organisation to which complaints can be referred and through which our needs can be made known. It is time some firms realised that the important person is the customer.

PETER D. TURNER.

Stroud, Gloucestershire.

TAPE RECORDS V. LP DISCS

FROM time to time correspondence appears in your columns concerning the price of pre-recorded tapes *vis-a-vis* LP discs, and a recent experience of mine highlights the existing anomaly.

I recently purchased my first pre-recorded tape (CAT 255-Sibelius' Fifth Symphony, plus Finlandia) and can confirm that the LP disc version of this particular performance lasts for exactly 32 minutes, including movement breaks—i.e., one track of a standard 7-inch tape spool.

Now here's the rub. It is impossible to examine these Columbia tapes before purchase as the carton is film-wrapped, but on opening it after purchase, I found that the 7-inch spool contained only 843 ft. of tape, with the playing time per track of $22\frac{1}{2}$ minutes. This means, of course, that the track has to be changed before the final movement of the symphony can be played.

What nonsense this is. The Work could well have been recorded on one track, and since the tape version costs 84s. [*sic*]*—more than double* the LP disc version—surely it would not be unreasonable to expect Columbia to provide a full 1,200 ft. of tape.

Anyway, this experience has effectively stopped my purchasing any further such tapes, and I imagine that many of your readers have had similar experiences. As a rider, you may be interested to know that I wrote to the Columbia Company on February 22 about this matter, but have received no word of explanation or even acknowledgment to date.

T. S. BRYAN.

Kew Gardens, Surrey.

Letters to the Editor

Those fictional advertises

IN reply to Mr. Caspar Brook's questions to me (*April 19 issue*), the first answer is "No"—the tape recorder industry is very unlikely to set up its own test examining body for the obvious—but shortsighted—reason that it is more profitable on a short-time basis to produce cheap low-quality machines and then sell them in large quantities by advertising, bordering on fiction, than it is to make top-quality, carefully tested, reliable machines.

The latter are more difficult and dearer to produce and therefore leave less for spending on advertising.

Because of the undisciplined advertising which is rife in the industry manufacturers are forced to keep banging the big drum; they have not noticed, maybe because they do not deal direct, that there are signs that the public is already waking up to this fact—"you cannot fool all the people all the time."

Nearly every editorial in all of the various tape recording magazines over the past few months has mentioned the faults in the industry, which other correspondents and myself have complained of.

How helpful would be the reports to customers and to consumers?

Mr. Brook already has over 250,000 answers to that question in his subscription list.

The public would be able to depend on factual reports and not only on biased advertising and on dealers who only want to sell the small selection they stock. Dealers would know what to stock and what not to recommend; at the moment many of them do not offer the best machines, which is shown by the junk they handle.

Lack of modesty forces me to point out that recently three large manufacturers have stopped production and in each case my firm refused point blank to stock or recommend their machines and had done for years.

D. HOWARD.

*Howard Tape Recorders,
Bromley, Kent.*

The ideal spool for airmail

THREE-INCH spools are perhaps the most used in tape correspondence, but the pattern used by most British manufacturers leaves much to be desired.

Firstly the material used does not travel well and frequently becomes broken in transit; and secondly why do we have to suffer the fiddling business of feeding into the centre of the spool for anchorage?

Kodak use a spool on their 8mm. cine film which is ideal for tape use. It is

COPYRIGHT:— "The reason for the controversy"

IT'S a pity, but the attempt by your correspondent, Mr. Comper (*April 19 issue*), to sweeten the "argument and acrimony" over the Copyright Laws is an over-simplification that has little relation to them.

In order to justify saying this, it is necessary, we feel, to give a brief account of the more general aspects of the Laws as they relate to all works.

The Copyright Act is laid down in the "Public General Acts and Measures" of 1956, over some thirty pages. Part One lays down the general law for literary, musical, artistic and other similar works, while Part Two is applicable to Copyright in recordings and broadcasts. In Part One, after preliminary definition of Infringements of Copyright, exceptions are listed.

In Section 6, Sub-section 1, it is stated that: *No fair dealings with a literary, dramatic, or musical work for the purposes of research or private study shall constitute an infringement of copyright.* Sub-sections 2 and 3 extend this to criticisms, reviews and reportage.

Sub-section 5 states that public reading or recitations of parts of a literary work, except for broadcasting, similarly do not constitute infringement.

Section 9 (Sub-section 1) extends the above quotation from Section 6 to artistic works. Furthermore, in Sub-section 5 the exceptions are extended: *... the copyright in an artistic work is not infringed by the inclusion of the work in a cinematograph film or in a television broadcast, if its inclusion is only by way of background or is otherwise only incidental to the principal matters represented in the film or broadcast—even if they are published.* (Sub-section 6)

In Part Two, after extending the preliminaries of Part One to Sound Broadcasts, it is stated (Section 12, S-s 5) quite bluntly: *The acts restricted by the Copyright in a sound recording are the following . . . that is to say:—(a) Making a record embodying the recording. (b) . . .* where record means any tape, or similar, recording.

There are no exceptions, nor any qualifying statements.

This, then, is the reason for the controversy. What is so different about a sound recording, compared with any other literary, or artistic, work (in the

eyes of the law) that it can, under no circumstances, be reproduced even for purely personal use, without infringement of copyright?

Of course an author must be paid for use of his work—as the Mechanical Copyright Protection Society and Mr. Comper have pointed out. But having bought a book, one is not required by law to pay a further royalty to the author if one copies out a page. Why, then, should one have to pay for a licence in order to make a tape-recording of a record one has bought?

The main worry of the copyright societies seems to be, that if the law were more lax, they would lose income from the granting of licences to those individuals who are at present sufficiently law-abiding to take the trouble to obtain one. Now, we doubt whether there are large numbers of these people if only because the average owner of a tape recorder is unaware of the stark wording of the law. ("I'm only recording it for myself. I'm not selling it to anyone.") But this situation is unlikely to change, and all the copyright societies can do is to issue idle threats of legal action. Idle, because, even if, as someone has pointed out, the offending tapes have not been bulk erased before they can be confiscated for evidence, it is unlikely that police officers up and down the country will start issuing search warrants for thousands of respectable homes, on the grounds that a private society believes they may contain illegal recordings.

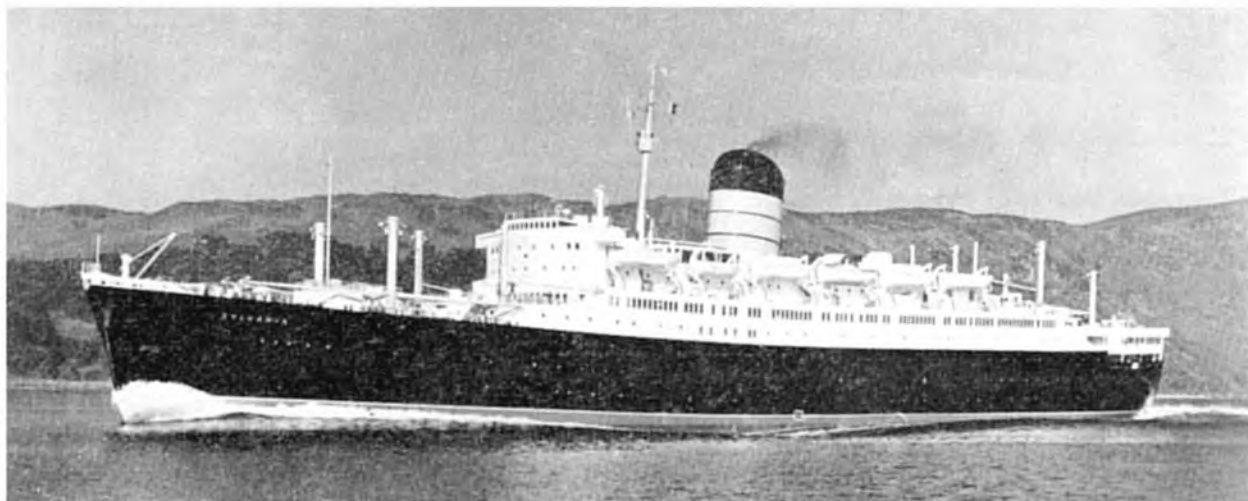
Perhaps the answer is the insertion of an extra clause in Part Two of the Copyright Law, to the effect that: "If an owner of a record of which he does not also own the copyright, makes a recording of it for his own private purposes, then this shall not constitute an infringement of copyright." This would remove the present absurdities of the law, and at the same time would hardly cause a great decrease in the number of licences issued. Certainly, the copyright societies would still have the legal power to prevent a person buying a record and selling taped copies to his friends.

With regard to the last paragraph of Mr. Comper's letter, it is obvious that he is not fully aware of the position. We did not wish to use a *commercial* recording of "Who's Sorry Now" (we cannot see any other interpretation that can be put upon his saying that it would be disqualified under Rule 3) but a tape recording that we ourselves had made in a Kentish pub of some villagers singing that song. The copyright of the recording is ours, although not that of the words. We were not "aggrieved" by the necessity of obtaining a licence—in these circumstances this is perfectly justifiable—but only because we were charged the same for a short incidental background as we would have been for a complete, main recording of the song, entered alone in the Musical Section.

P. TUCKER and D. J. GARRETT.
Tonbridge, Kent.

W. J. TOMLINSON.

Walthamstow, E.17.



The "Sylvania," seen during her trials off the Scottish coast

RECORDING ON A TRANSATLANTIC VOYAGE

The first of three travel articles

By

A. C. WILSON

LAST October my wife and I left Liverpool bound for Montreal to visit colleges and universities in Canada and the north-eastern United States. We hoped to record material for lectures to be given on our return, mainly on certain aspects of American education, and to make a 16 mm. film on the same subject.

Our equipment consisted of a Fi-Cord tape recorder and battery charger, a Grampian DP4 microphone and lead, and two sets of batteries; for filming we used a Bolex H16 camera with Taylor, Taylor Hobson lenses on an M.P.P. tripod, and a Weston exposure meter.

Before leaving England we received permission from the Cunard Steamship Company to interview officers and members of the crew of the *Sylvania* during our passage, and to film in the engine-room, wireless cabin, printing shop, galleys and other parts of the ship not usually open to the passengers. When the alarm bells went for boat drill a few hours after leaving port, the unobtrusive Fi-Cord was slung over my wife's life jacket and immediately put to work.

The sheer size of the ship, the quantity of stores carried, the details of organisation and administration were all of interest and could be brought out in the course of our interviews; the inevitable statistics acted as a skeleton, to be given flesh by the film sequences we had planned.

Furthermore, the facts and figures came to life on their own when illustrated verbally by recordings of various specialists talking about their jobs—printers, chefs, laundry attendants, children's nurses and fire control staff.

Then there was the daily programme of entertainments to record, the orchestra playing in the lounge at tea-time and for dances every night; Bingo and horse-racing, organised by the Purser after dinner; the children's party near the end of the voyage. Altogether, we used a good deal of tape which we are now busy editing, and can think of many other subjects we wish we had recorded, but somehow failed to do while we had the chance.

And now for a word of warning: we did not find it possible to re-charge the Fi-Cord's batteries during the crossing, as there was no supply of alternating current to the cabins. We did not ask if a suitable supply was available anywhere else on the ship because our two sets of batteries just lasted the voyage—but a third set would have given us greater peace of mind.

Another difficulty we encountered concerned the lead to the Grampian microphone, which broke away from the tags on the Fi-Cord plug before we reached Montreal. A ship's officer kindly took away the pieces and did an excellent repair job, which lasted until we were in sight of Southampton on the return journey, when the connection broke again. On this occasion the failure was not a serious handicap as we did not have any more recordings to do at that time, but circumstances might arise where such a mishap would be disastrous.

There seems to be too much play at the end of the cable where the wire enters the top of the plug via a rubber sleeve; however carefully the plug is used, continual slight bending is bound to occur, and this weakens the wire so that it snaps off just above the tags. A slight modification of the plug ensuring less play at the danger-point is called for.

Apart from this, our only other criticism of the equipment is that the warning light on the Fi-Cord, designed to show when the batteries need re-charging, is strangely unprotected. Ours broke while lying in the luggage rack of a sleeping car travelling between New York and Pittsburgh, and as a result one tape—not a very important one—was inadvertently recorded when the batteries were low and the speed of the motor had begun to drop. On replay at the true speed our voices sound like those of very young children gabbling at an impossible rate—but not quite quickly enough to be correct at a speed of $3\frac{1}{2}$ ips.

As Fi-Cords are very rugged in other respects and are designed to be used on expeditions where they might not be as carefully treated as a home tape recorder, it would seem a good idea to provide extra protection for the bulb. (I should point out, nevertheless, that the bulk of our recording in America was done after the light had been broken, and apart from the one spoilt tape mentioned above, it had no harmful effect whatever on the working of the machine.)

The performance of the Fi-Cord in all other respects was exceptionally good and the recordings we have brought back with us—not only of speech but of live music as well—continue to amaze us by their quality.

On arrival in Canada we bought an American-type plug and fitted this to the battery charger, which can be quickly adjusted to operate on 110 volts AC, and in less than 24 hours the first set of batteries was charged, and we were ready to begin work.

News from the Clubs

AN idea that may well spread to other clubs has been put into production by the members of the **WEST MIDDLESEX** club. They are setting themselves a programme of producing a series of discussion tapes on subjects concerning several aspects of tape recording. The first one has been completed and relates to the use of transistors in preference to valves.

Production of these tapes began after consideration of the best way to teach the inexperienced more about their hobby. It was felt this could be achieved by a "novice" putting questions to "experts" and recording the conversation. Points raised in general discussion could then be kept for future reference by anyone needing further study.

Secretary "Sandy" Saunders describes their initial attempt as quite successful, and plans are now being made for further sessions. These are to include recording techniques, impedance matching, dubbing, tone controls, frequency response, equalisation and filters.

Clubs throughout the country are invited to make use of these tapes. The members are charging a nominal fee of one shilling for dubbing, apart from the return postage.

TDT 1, on transistors, last twenty minutes and may be obtained from Mr. Saunders at 20, Nightingale Road, Hampton, Middlesex. The members would be pleased to receive suggestions for further titles.

A number of manufacturers' demonstrations have been held at meetings, the most recent of which was the visit by Mr. Martin, of Zonal Film Facilities, and by Mr. Hartley, of Simon Equipment Ltd.

Mr. Martin gave an enlightening lecture on the art of perfect synchronisation of tape and cine, and illustrated his talk

with demonstrations of the comparative advantages between magnetic and optical track striping. 16mm and 8mm films were shown, and the advantages of striping film in the manner described, instead of having to align projector and recorder every time, were vividly depicted.

On April 27, Mr. Hartley described and demonstrated the complete range of recorders made by his company, and endeared himself to the members by his frankness on some points of design. His visit led to a discussion on the claims made by certain manufacturers. It became obvious that the club members are far from satisfied with many of the absurd specifications quoted for many models.

Plans for the club's competition have now been laid, and it has been decided this will take the form of an annual contest between groups or individuals. The prize, the Chairman's Trophy, is to be a silver-plated microphone mounted on a suitable plinth. This is currently being prepared by the present chairman Ken Phipps.

The tape entries, as described in our March 22 issue, are to include certain listed sounds which will have to be linked together with narrative. Twenty sounds have been listed, and eighteen of these have to be incorporated in the contest tapes. The sounds vary from train noises and church bells to footsteps and general conversation. They may be recorded live, or simulated. Points are to be awarded on the success achieved with sound effects.

Looking ahead a bit, the members have arranged to display their talents on a stand at the Thames Valley County Grammar School Fête to be held on July 8. A "Record your voice" stand is to be set up, and members will make a small charge, the proceeds of which will go to help swell club funds.

The **CHESTERFIELD** members are also busily engaged in a competition. At their May 1 meeting members took along their five-minute feature tapes which were to be judged by Keith Fricker and Norman Littlewood of the **Nottingham** club.

During the same evening, members Dave Baldwin and Geoff Foster were to give the third lecture in a series of demonstrations relating to valve theory and practical construction work.

A small group of members have recently completed a feature tape telling the story of Chesterfield's Parish Church, the church with a twisted spire. Interviews were obtained with the Archdeacon, and with the bellringers during a practice session. Recordings were also made of the choir, organ and bells. The completed tape will be sent to Mr. Bob Brunson of the **World Tapes for Education** team in Oklahoma. Chairman Bill Kemp had received a request to this effect from the American organisation.

"Microphones, their types and uses," was the heading for a talk given to the members of the **LEEDS** club at one of the latest meetings. The lecture was delivered by Mr. Goodman who also described and demonstrated a number of mixer units.

A number of microphones, as used in the studio where these club members meet, were available for inspection and use. Also to hand was a disc-cutting machine. Members were given a short demonstration of its use, and later listened to a description of the production of a commercial disc.

The second part of the March 14 meeting, was devoted to ciné, and the members operated and inspected a 16mm projector.

More recent meetings have covered an "open night," with members being called upon to produce five-minute tapes for the entertainment of their visitors, and a play-recording session. This latter project was nicely organised with the club being divided into two groups—actors and recording engineers. After a break the groups reversed their roles.

Also with play-production in mind are the members of the **WALTHAMSTOW** society. At their A.G.M., held on April 14, secretary Ken Perks said their last production, *Butchers Revenge*, written, produced, directed and acted by members, had been a very enjoyable activity, and it was anticipated that they would be embarking on another production shortly.

Mr. Perks was reviewing the past year and many of the activities covered during the past twelve months were described by him. Their hospital request programme seems to have gone down more than well with the Connaught Hospital, and the recognition by the Borough Council forecasts an active club in the future.

Two productions of documentary tapes have taken their place in the Borough archives to form part of the Walthamstow story, and another, dealing with the local railway's change from

(Continued on page 33)



Members of the Reading Cine and Tape Recording Society prepare to film and record the Reading University's Rag Day. Five cameras and three Fi-Cords were used.

Left to right are: D. M. Noyes (Secretary), C. Keston, E. R. Nash, N. Chescoe, J. D. Lloyd, C. De Placito, and H. Henderson. Distinguishing armbands were worn, and one of the cue boards, used to facilitate editing, can be seen in Mr. Keston's hands.

Classified advertisements

Rate—Sixpence per word (minimum 5s.); **Trade**, ninepence per word (minimum 10s.); **box numbers**, one shilling extra. **Payment with copy**. Copy should be sent to Advertisement Department, "Tape Recording Fortnightly," 1, Crane Court, Fleet Street, London, E.C.4.

SERVICES

Tape recorder need repairing? Then let London's Largest Tape Recorder Specialists do it for you, expertly and economically. Essex Tape Recorder Centre, 2, Maryland Point Station, Stratford, E.15.

FERROGRAPH 4 A/N's-808's, VORTEXION WVA, WV, SIMON SP4, REFLECTOGRAPH A-B, etc., always in stock and ready for immediate delivery, as well as over 200 latest 1960 recorders at London's Largest Tape Recorder Specialists. The best, lowest H.P. terms, and finest selection of new and s/h recorders, from £18. Generous P/E allowances. Essex Tape Recorder Centres, 2, Maryland Point Station, Stratford, E.15, and 205, High Street North, East Ham, E.6.

GRUNDIG sales/service in your area: High Wycombe phone 457, Newbury phone Thatcham 3327, Wallingford phone 3083, Orpington, Kent, phone Orpington 23816, New Malden phone Malden 6448, Watford phone Garston 3367.

TAPE TO TAPE—Special offer to amateur recordists. We will duplicate your tapes—mono and stereo—at **TRADE RATES** on our new modern equipment. 24-hour service. Compare these prices: 150 ft. 2s. 3d., 300 ft. 3s., 400 ft. 3s. 9d., 600 ft. 4s. 6d., 900 ft. 5s., 1,200 ft. 8s. 6d., 1,800 ft. 9s. 6d., 2,400 ft. 16s. Above prices for mono 2-track and 2-track stereo, on *your* tape. Tape supplied at 15 per cent off retail prices. Post and packing 1s. 6d. per reel. Also discs cut. 12 in. L.P.s double-sided 32s. 6d. Write details. **ESOTERIC PRODUCTIONS LTD.**, 22, Coastal Chambers, Buckingham Palace Road, London, S.W.1.

MISCELLANEOUS

WAL PRODUCTS. The new D-Mag Head Demagnetiser, nylon bushed probes, £2 10s. The new Hi-Gain Pre-amp, with tape equalisation, ideal for Ferrograph, Philips, etc. For monitoring, dubbing, playback, etc., £7 16s.

WAL BULK ERASER (for tape and film), £7 18s. 6d. **MONO WAL GAIN** £5, **STEREO** £7 10s. Professionally designed, professionally built, for professionals. **WELLINGTON ACOUSTIC LABORATORIES LTD.**, Farnham, Surrey (6461).

Something to sell?—equipment for exchange?—looking for a job in the hi-fi tape field?—seeking a tape contact abroad?—tape-to-disc services to offer?—expert staff needed? A classified advertisement in *Tape Recording Fortnightly* will bring you quick results—cheaply.

MISCELLANEOUS

FRIENDLY FOLK ASSOCIATION, 87, Terrace, Torquay. Leading International Correspondence Hobby Club since 1943. Now included, facilities for Tapesponding. Details free.

WAL GAIN transistorised pre-amplifiers. Many applications, extra gain for Mics, Tape Heads, P-U's, etc. Mono version, £5. Stereo, £7 10s. **WAL BULK TAPE ERASER**, both tracks 8-in. reel erased 30 sec., £7 18s. 6d. **WALTRAK** transistorised oscillator, 1,000cps, indispensable for Service, £6 10s. Full technical literature sent, supplied through all leading dealers. Wellington Acoustic Laboratories Ltd., TRC Dept., Farnham, Surrey.

EASYSPLICE TAPE SPLICER—PATENTED & GUARANTEED makes tape splicing simple, easy and accurate. 5s. P. & P. 6d. Agents wanted, discounts to clubs. **EASYSPLICE**, 30, Lawrence Road, Ealing.

"BRAND FIVE" RECORDING TAPES: 5 in. L.P. 18s. 6d. 5½ in. L.P. 23s. 6d.; 7 in. S.P. 25s.; 7 in. L.P. 35s. **CONTINENTAL** 3-pin sockets, 1s. 3d. 3-pin plugs 3s. 6d. 3-pin line couplers 5s. Metrolabs 3s. 11d. Klenzotape 12s. 6d. Scotch Boy 3 in. Message Tapes 5s. 3d. "Instant" Bulk Eraser 27s. 6d. Record Changer or Non Auto, Dust Bug, only 23s. 1d. All post free from **RELAY RECORDINGS** of Mott Street, High Beach, Loughton, Essex.

BARGAINS IN PRE-RECORDED TAPES. Private collector now finally disposing of over 85 American-made 3½ and 7½ ips **MONAURAL** double-track tapes at cost of raw tape. Selection includes Symphonies, Ballet, Light Classical, Novelties, Theatre and Caliope Organs etc. All 5 in. reels Mylar base L.P. tape in perfect condition. From 15s. 6d. Most of the music on these tapes has never been issued in U.K. Send S.A.E. for lists to Gifford, 4, Hadley Chase, Hadley Common, Barnet, Herts.

"BRAND FIVE" American Tape. Long Play 5 in. (900 feet) 18s. 6d.; 5½ in. (1,200 feet), 23s. 6d.; 7 in. (1,800 feet), 35s. Sent by return. Post Free! Watts Radio, 54, Church Street, Weybridge, Surrey.

PRE-RECORDED TAPES

Unique 40-page catalogue listing all makes, Mono, Stereo, 7½ and 3½ ips. Send 2s. 6d., refundable on first tape record purchased. Dept. 6, Teletape Ltd., 33, Edgware Road, W.2. PAD 1942.

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TAPE TO DISC RECORDING
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48-HOUR POSTAL SERVICE

S.a.e. for leaflet to Deroy Sound Service, 52, Hest Bank Lane, Hest Bank, Lancaster. Tel.: H.B. 2444.

JOHN HASSELL RECORDINGS. Tape/Discs. All Speeds. CCIR Studio, 21, Nassau Road, London, S.W.13. Riverside 7150.

FOR SALE

E.M.I. L/2A battery portable tape recorder. 7½ ips. Complete with Acos 33-1 microphone and carrying case. Three years old, with intermittent use and recently serviced by makers. Original price £102. For quick sale £50 o.n.o. Box 417, *Tape Recording Fortnightly*, 1, Crane Court, London, E.C.4.

FI-CORD, ten months' guarantee, £45 cash. Telephone PARK 2171, evenings.

FI-CORD battery recorder. Unused, with Grampian and dictation microphones, charger, spare batteries, £45. Box 413, *Tape Recording Fortnightly*, 1 Crane Court, London, E.C.4.

VORTEXION W.V.B. Four months old. Cost £110. Hardly used. Bargain at £80. Ring Chiswick 6631 anytime.

Brand new unused Grundig GMV 3, 14 guineas. De la Hunty, 26, Boone St., London, S.E. 13.

TANDBERG series 6 deck (latest mod.), used only 8 hrs. Purchased mid-March. £80. Box No. 412, *Tape Recording Fortnightly*, 1 Crane Court, London, E.C.4.

The "Documentor" Brand New. Offers over £30. Box 461, *Tape Recording Fortnightly*, 1 Crane Court, London, E.C.4.

FERROGRAPH Model 808 Stereo. Still under guarantee. As new. Cost new £110, asking £79. A. S. Mackenzie-Low, Millfield, Old Town, Bexhill-on-Sea, Sussex. Tel.: Bexhill 3922.

KORTING 4-track Stereo, unused since overhaul by makers. £71 8s. new. £60 o.n.o. Box 414, *Tape Recording Fortnightly*, 1, Crane Court, London, E.C.4.

FERROGRAPH model 2 recently overhauled, £35, also Philips 4-track Type EL 3542, almost new, £40 o.n.o. Inspection and demonstration London. Box 415, *Tape Recording Fortnightly*, 1, Crane Court, London, E.C.4.

PHILIPS Stereo, EL 3522/24; Harting microphone; 3 x 1,800 ft. BASF tapes, all near new and unused. £50 o.n.o. M. Hollies, 17, Vicarage Gate, London, W.8. (WES 0496).

News from the Clubs

(Continued from page 31)

steam to electric trains is nearing completion. This also will be offered to the Borough Librarian.

Seventeen members were present at the first anniversary meeting of the **EASTBOURNE** club held last month. Of these, four still remained from the initial half-dozen founder-members.

Chairman Miss Dee Harris, recalling the first year of the club's existence, made special mention of the work of Mr. Peter Kefford who organised and ran the tape magazine library, and Mr. Reginald Haslock who had been responsible for the club's publicity.

Mr. John Long presented a wooden gavel and board to the chairman who, with the secretary Mr. Brian Whattingham, and hospital representative Dennis Goldstraw, were re-elected.

Mrs. Teresa Holwell vacated the treasurer's post to Miss Toni Pratt and Miss Pat Edwards was elected to complete the committee.

A flair for active reporting has been shown by Robert Coote, the newly appointed publicity member of **THE VOICESPONDENCE CLUB**. Within 48 hours of the closing of the Audio Festival, a tape recorded review of the event was on its way round a small group of members living in the provinces.

Following the success of a similar review last year Mr. Coote set to work to make up a discussion programme of the main aspects of this year's show on tape. This was posted together with leaflets of equipment and accessories mentioned in a round-robin circuit taking in personal Voicespondence friends in Manchester (John Lloyd), Portslade (Ernie Pembroke) and Gravesend (Dave Chapman).

B.B.C. "Sound" Programme

A magazine for radio and recording enthusiasts

Introduced by Douglas Brown

Soon after we went to Press on the last issue a change of programme was announced by the BBC. As a result, the programme items we published gave way to a visit to a recording studio to see Cliff Richard at work. The original programme is now to be broadcast as indicated below.

6.40 p.m. May 22

(A repeat of the programme broadcast on May 14)

SOUND IN THE THEATRE: Harry Craig discusses with Peter Hall and Donald McWhinnie some interesting uses of sound effects in current stage productions in London

"Sound" is broadcast on alternate Sundays at 2.40 p.m. on Network Three

The next new programme is on May 28

CLUB MEETING DIARY

Is your club included in this list? If not, send details, on a postcard please, including date of the next meeting.

ACTON: Alternate Fridays at the King's Head, Acton High Street. (May 26.)

BATH: Alternate Wednesdays at 35, Green Park, Bath. (May 17.)

BETHNAL GREEN: Every Friday at Shoreditch Tabernacle, Hackney Road.

BIRMINGHAM: Every Monday at the White Horse Cellars, Constitution Hill.

BIRMINGHAM (SOUTH): Alternate Mondays at Strichley Institute, Hazelwell Street, Strichley. (May 22.)

BLACKPOOL: Every Wednesday at 173, Church Street.

BOURNEMOUTH: Alternate Tuesdays at the Civil Defence Centre, Holdenhurst Road. (May 30.)

BRIDGWATER: Alternate Tuesdays at Erio's Radio, West Street. (May 30.)

BRIGHTON: Every Wednesday at Fairlight School, Pevensey Road.

BRIXTON: Every Tuesday at The White Horse, Brixton Road, S.W.9.

CAMBRIDGE: Every Wednesday at the Mitre Hotel, Bridge Street.

CATFORD: Every Friday at St. Mary's C.E. School, Lewisham, S.E.13.

CHESTERFIELD: Every 3rd Monday at the Yellow Lion Inn, Saltergate. (May 22.)

Besides putting his provincial friends in the picture, Mr. Coote of London hopes that as the tape travels around the circuit followed by the regular round-robin tape, dubbings will be taken for playback at the South Manchester, Portslade and Gravesend clubs. I do not think he will have any worries on that score.

The **ULSTER** tape society has been invited to erect a stand at the Kings Hall, Belfast, to promote membership. Work is now in hand to make this a success, and their publicity-minded secretary has spread the news of the event with an article in the local paper.

Tape recorders and accessories will form the major part of the proposed display, and the work of the society will also be demonstrated by a special section where members will be on hand to answer inquiries.

Tape recordings of some of the services rendered will be played, and according to the news paragraph the exhibits will provide the opportunity for visitors to hear a ghost. Recordings made at the club's experiment station at the Guild Hall, Dromore, are described as making "interesting listening." Forecasting the spread of tape recording, secretary Mr. C. Monaghan told the newspaper reporter that the U.T.R.S. is going all out to give the best display possible. "Tape recorders have become so popular that in future it will be said: 'Come round and hear my tapes' and not 'my records'."

NEW CLUBS

Mr. M. Haigh organised the first meeting of the **Richmond** club on April 25. Meetings are to be held on alternate Tuesdays, the next being on May 30. His address for would-be members, is 53, Kings Road, Richmond Surrey.

The second new club for this issue has been formed at **Pontypool** in South Wales. The full title of this society is the Pontypool Tape Recording and Recorded Music Society. The secretary is Mr. G. A. Owen, and he can be contacted at 10, Coedcal Terrace, Pontypool, Mons.

COTSWOLD: Every 3rd Thursday at the Theatre and Arts Club, Cheltenham. (May 25.)

COVENTRY: Alternate Thursdays at Queens Hotel, Primrose Hill Coventry. (May 25.)

CRAWLEY: 1st and 3rd Mondays in month at Southgate Community Centre.

DARTFORD: Every 4th Tuesday at Dartford Public Library.

DOVER: Alternate Mondays at The Priory Hotel. (May 29.)

DUNDEE: Alternate Mondays at The Salvation Army Hostel, 31, Ward Road. (May 22.)

EASTBOURNE: Alternate Saturdays at Hartington Hall, Bolton Road. (May 27.)

EDINBURGH: 1st Tuesday and 3rd Sunday at 23, Fettes Row, Edinburgh 3.

ENFIELD: Alternate Wednesdays at Bush Hill Park School, Main Avenue, Enfield. (May 24.)

GRANTHAM: Weekly, 1st week in month, Wednesday; 2nd, Monday; 3rd, Thursday; 4th, Friday, at Grantham Technical College, Avenue Road.

GRIMSBY: Alternate Tuesdays at the RAFA Club, Abbey Drive West, Abbey Road. (May 23.)

HARROW: Alternate Thursdays at St. George's Hall, Pinner View, North Harrow. (May 18.)

HINKLEY: Alternate Wednesdays at The Wharf Inn, Coventry Road. (May 24.)

HUDDERSFIELD: Ring Huddersfield 5820 for details from S. Blackstone Esq.

ILFORD: Every Tuesday at the RAFA Rooms, Cranbrook Road.

IPSWICH: Alternate Thursdays at the Art Gallery, High Street. (May 25.)

KEIGHLEY: Alternate Wednesdays at the South Street Sunday School Rooms. (May 17.)

KETERING: Alternate Wednesdays at the Rising Sun, Silver Street. (May 24.)

LEEDS: Alternate Fridays at 21, Wade Lane, Leeds 2. (May 26.)

LEICESTER: 1st and 3rd Friday at Bishop Street Reference Library.

LONDON: 2nd and 4th Thursdays at the Abbey Community Centre, Marsham Street, S.W.1.

LUTON: 2nd and 4th Tuesdays at Flowers Recreation Club, Park Street West, Luton.

MAIDSTONE: Every Thursday at The Armstrong Hall, South Park.

MANCHESTER: Every Saturday, 6 p.m., at 20, Naylor Street, Hulme, Manchester 15.

MIDDLESBROUGH: Every Tuesday at 130, Newport Road.

NOTTINGHAM: Alternate Thursdays at the Co-operative Educational Centre, Broad Street. (May 25.)

PONTYPOOL: Every Monday at the Hospitality Inn, Crumlin Road.

PLYMOUTH: Alternate Wednesdays at Virginia House, Plymouth. (May 17.)

RUGBY: Alternate Thursdays at the Red Lion, Sheep Street. (May 18.)

SOUTHAMPTON: 2nd and 4th Thursday at The Bay Tree Inn, New Road.

SOUTH DEVON: Alternate Wednesdays at the Man Friday Cafe, Torwood Street, Torquay. (May 17.)

SOUTH-WEST LONDON: Every Wednesday at Mayfield School, West Hill, S.W.18.

STAFFORD: Alternate Tuesdays at The Grapes, Bridge Street. (May 30.)

STEVENAGE: Alternate Tuesdays at the Tenant's Meeting Room, Marymead. (May 23.)

STOKE NEWINGTON: Every Wednesday at 53, Londesborough Road, N.16.

WALTHAMSTOW: Alternate Fridays at 22, Orford Road, E.7. (May 19.)

WARE: 2nd Tuesday at The Old Brewery Tap, High Street.

WARWICK: 1st and 3rd Wednesdays in Room 18 of the Royal Leamington Spa Town Hall.

WEST HERTS: Fortnightly, alternating at the Cookery Nook, Watford (May 17) and Heath Park Hotel, Hemel Hempstead. (May 31.)

WEST MIDDLESEX: 2nd Thursday at the Railway Hotel, Station Road, Hampton, and 4th Thursday at St. George's Hall, Lancaster Road, Southall Broadway.

WALSALL: Every Wednesday at 113, Lichfield Street.

WEST WALES: 1st and 3rd Thursdays at The Meeting House, New Street, Aberystwyth.

WEYMOUTH: Alternate Wednesdays at The Waverley Hotel, Abbotisbury Road. (May 17.)

WINDSOR: Every Thursday at The Royal Adelaide Hotel.

WINCHESTER: Every Friday at The Ship Inn.

WOOLWICH: Alternate Mondays at the North Kent Tavern, Spray Street, Woolwich. (May 22.)

YORK: Every Monday at 11, Southlands Road, off Bishopthorpe Road, York.

Unless otherwise stated, meetings start between 7 and 8 p.m.

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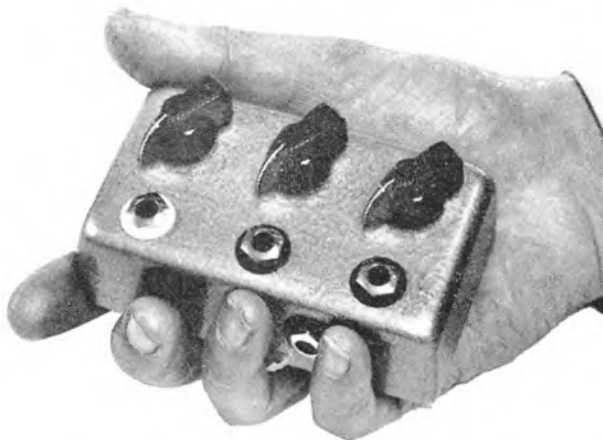
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When writing to manufacturers for information about new products, please mention that you saw it in "Tape Recording Fortnightly."

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2 THE NEW IMPROVED MIXER-FADER

With this mixer-fader you can blend together three separate input sources to produce a single recording. Items can be faded in or out in professional style. Skilful use of this instrument can save you hours of tedious editing work, too. Now available for either three microphone inputs or two microphones and one high level signal, e.g. radio feeder. Restyled and attractively finished in hammer green it represents outstanding value at 45s.

3 THE MONITOR

It is of great assistance to know exactly what you are recording on a tape. This transistorised unit gives you full monitoring facilities. Used in conjunction with the mixer-fader, it acts as a pre-amplifier and gives you the essential basis of a home recording studio. The price is five guineas.

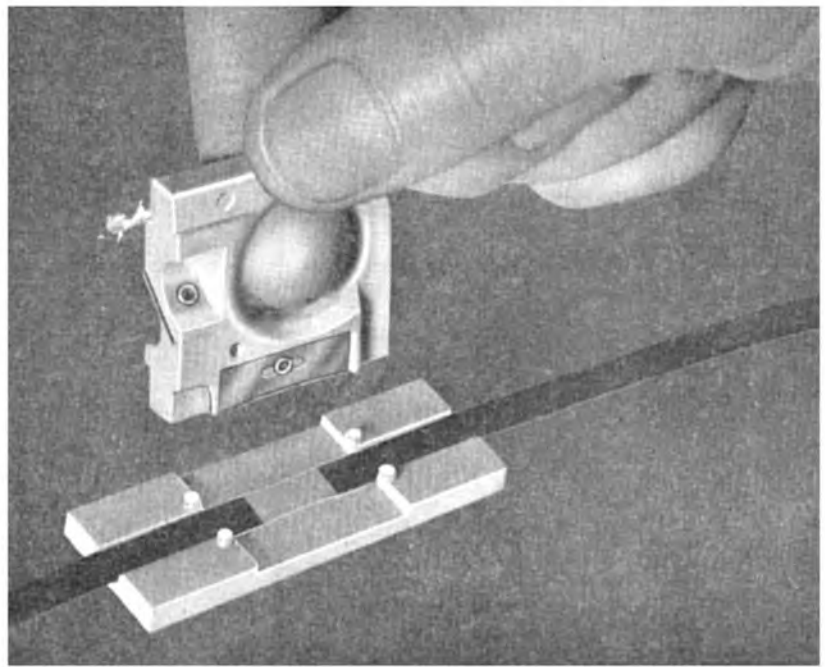
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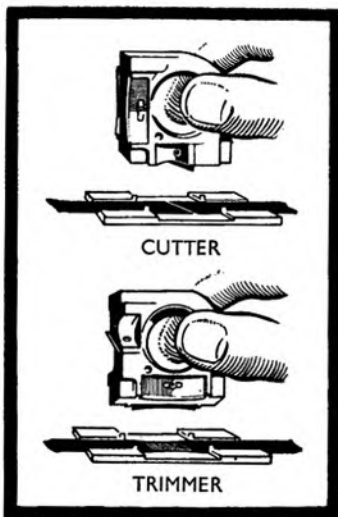
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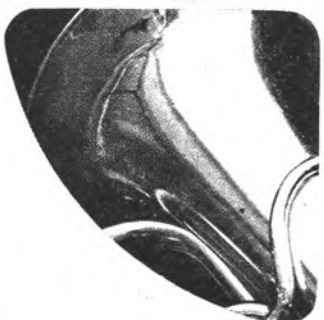
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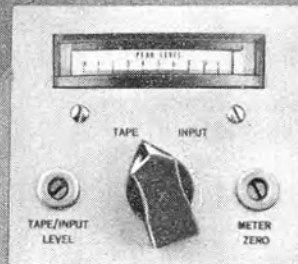
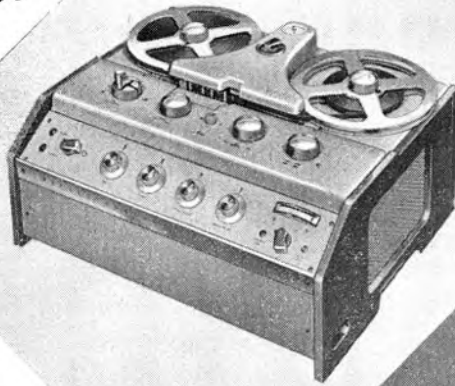
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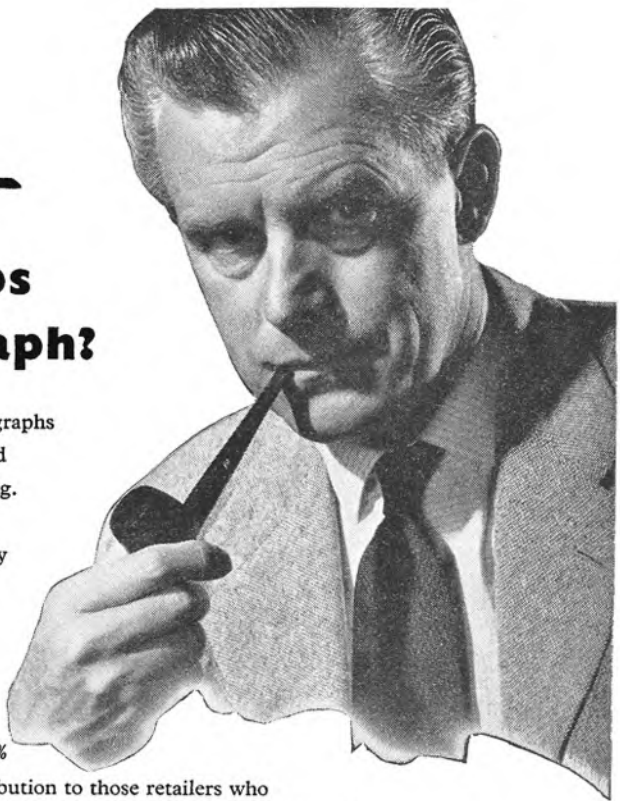
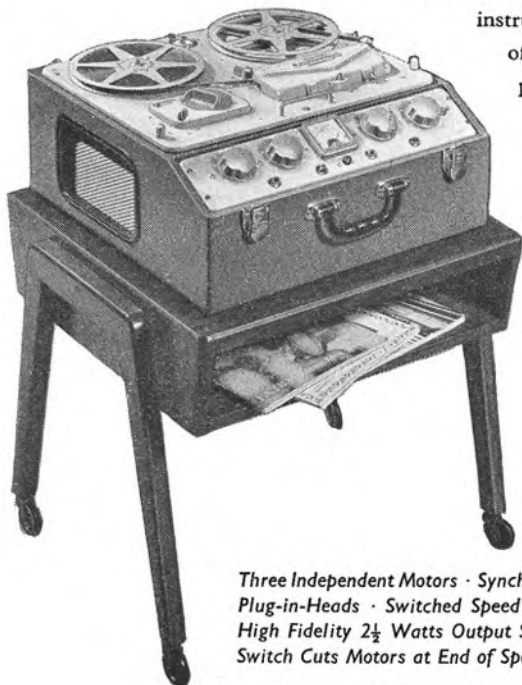
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We freely admit that because there are so few Ferrographs available for the home market (last year 47%

of our output went overseas) we must limit distribution to those retailers who specialise in Sound Recording and Hi-Fi equipment. For—as we have frequently stated—*Recording* is our business. We have no intention of developing the Ferrograph as a possible competitor to the gramophone.

We believe that those whose needs cause them to choose a high performance instrument like the Ferrograph are much more concerned with quality of reproduction than with short-life narrow gap heads, extreme pre-emphasis, ultra-slow tape speeds, hum bucking and other such artifices. For us there can be no compromise with quality. Should you have difficulty in locating a near-by Ferrograph Dealer, please get in touch with us.



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On versatility alone, the Major is unmatched by any other recorder. Superimposition. Built-in independent mixing. Monitoring. Independent bass and treble control. A meter for recording level. The important 3 speeds. Now, besides the standard twin-track model there's even a 4 track version.

How many laymen could exploit—or even *understand*—the

immense range of recording possibilities and permutations that all this offers? Yet these are some of the reasons that place the Major in a class of its own.

Tape recording has advanced by leaps and bounds over the past decade. The Major takes advantage of this fact. Avoiding untried "gimmicks" it nevertheless incorporates every genuine major recording development that has occurred during these discovery-packed years.

And the ultimate result—the 1961 Major—must be seen, heard and tried to be appreciated. Study the specification printed here. If you are a serious enthusiast...

... if your recording needs are deep and diverse... then postpone all buying decisions until you've examined the Elizabethan Major.

Available in either twin or 4 track versions

65 gns
excluding microphone

MAJOR SPECIFICATION

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OPERATING SPEEDS	7½, 3½, 1½ inches per second
WOW AND FLUTTER	Not greater than .15% at 7½ ips
LONG TERM SPEED STABILITY	Better than .5%
TAPE POSITION INDICATOR	Digit Counter
HEADS	One Record/Play (3 micron gap) One erase
FREQUENCY RESPONSE	7½ ips — 50–20 kc/s±3dB 3½ ips — 50–14 kc/s±3dB 1½ ips — 50–7 kc/s±3dB
AMPLIFIER OUTPUT	6 watts push-pull
SIG/NOISE RATIO	43dB unweighted
VALVES	1×8D8, 3×ECL82, 2 metal rectifiers
BIAS FREQUENCY	64 kc/s
REPLAY CHARACTERISTIC	CCIR
RECORD LEVEL	M/C Meter
INPUTS	1: Mic. 2 millivolts at 1 Megohm 2: Gram. 200 millivolts at 100-300K

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MIXING	Independent Mic. and Gram. controls
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BBC PHOTOGRAPH

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TAPE

RECORDING
FORTNIGHTLY

Vol. 5 No. 11 31st May, 1961

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"Tape Recording Fortnightly" is published on alternate Wednesdays, by Print and Press Services Ltd., from 7, Tudor Street, London, E.C.4.

The Editor is always glad to receive articles, news items, illustrations, etc., intended for publication. When not accepted, material will be returned if a stamped addressed envelope is enclosed, but the Editor cannot accept responsibility for the safety of such material.

"Tape Recording Fortnightly" is available by a postal subscription at 45s. per annum, post free, or it can be obtained at newsagents, bookstalls and radio and music dealers. In the event of difficulty, write to the distributors.

Back numbers, if still in print, are available at 2s. 6d. per copy for issues up to November 1959, and 2s. per copy for later numbers.

EDITORIAL Editor, R. D. Brown

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We take the view . . .

A DIGEST OF NEWS, COMMENT AND EDITORIAL OPINION

THE Association of Professional Recording Studios, Ltd.—now celebrating the tenth anniversary of its incorporation as a company limited by guarantee—has enrolled more than 100 members. There is a good geographical distribution throughout the country, though there still seem to be some major cities where opportunities exist.

The Association was first formed by a handful of the older studios in 1947—to co-operate to meet the problems of purchase tax, copyright, musicians' rights and so on. Common standards of quality, performance and service were also part of its purpose.

It has given good service to its members and to the public. Professional studios who are not yet members should write to the Association at Excelsior Works, Rollins Street, London, S.E.15.

Nature study

READERS with recordings of animals and birds have the chance to join in one of the most exciting pieces of research for a long time. The Committee for Biological Acoustics, working in association with the British Institute of Recorded Sound, proposes to establish the largest library of such sounds in the world.

This is a strictly scientific project, but its success will depend a lot on the enthusiasm with which amateurs co-operate. Offers of recordings should be made to The Hon. Secretary, Committee for Biological Acoustics, c/o Anti-Locust Research Centre, 1, Princes Gate, London, S.W.7.

Easy as "pi"!

WHAT is the value of pi. Every schoolboy should be able to give the answer to three decimal places, but let's try to be more precise.

Well, it can be proved theoretically that it can never be worked out exactly, so it's a matter of where you decide to stop.

In 1853 a diligent gent called Shanks carried the sum to 530 decimal places. Twenty years later, when he had recovered, he carried on to 707 decimal places. Unfortunately, he made an error somewhere around the 530th decimal place!

And there, you might have supposed, the problem would have been allowed to

rest. And so it would—had it not been for the new EMI electronic computer using magnetic tape.

The experts wanted to give it a machine reliability test. They programmed it to calculate pi.

In 13 hours the computer made 53 million separate calculations and worked out pi to 10,880 decimal places. A 15-year-old schoolboy, using pencil and paper, might achieve the same result by the time he is 80.

But how would you settle the argument if the results disagreed?

Tape exchanges

EARLIER this year we began publishing a list of names of enthusiasts who wished to contact others of similar interests to exchange news and views by tape.

Although letters taking advantage of this offer have not flooded the office (it wasn't expected to), there has been a steady trickle. To date we have published about fifty names, and the latest of these are published below.

Readers wishing to be included in this list are invited to send their names, age, sex, address and special hobby or interest. Other details to be included are tape speed(s), maximum spool size, and whether two- or four-track.

Beynon, Colin (19). 20, Victoria Square, Penarth, Glamorgan. Short wave radio. 5½-in. spool.

Eastwood, D. H. (Male, 39). 10, Fernie Square, Cottesmore, Oakham, Rutland. 5½-in. spool. 3½ ips.

Eley, N. J. (Male, 38). "Lynstead," Kit Hill Avenue, Chatham, Kent. Air-line pilot, wishes to contact young people, either sex, UK or abroad. Technical interests.

Herkes, Joe (38). 445, Whalebone Lane North, Chadwell Heath, Romford, Essex. Musical interests, listening and teaching.

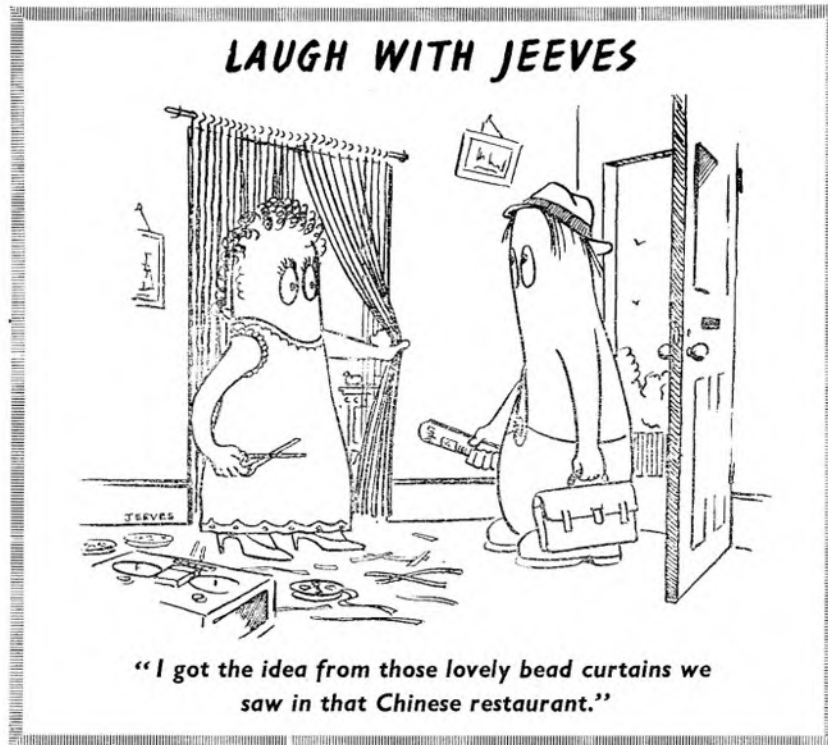
Higgs, Frank W. (40). 70, Milcote Road, Smethwick, Staffordshire. Sport, especially horse racing. 7-in. spools. 3½ ips.

Lawrence, F. G. (Male, 27). 6/445 New John St. West, Newtown, Birmingham 19. Prefers 3-in. spools. 3½ ips.

Roberts, John (26). 48, Harvist Road, London, N.W.6. Films and show business. Female contacts preferred, USA contacts particularly welcome. 7½, 3½ ips. 7-in. spools.

Wade, Steve. Flat 1, 34 Colville Square, London, W.11. Main stream and modern jazz. Message spools preferred.

Warner, Graham (21). 52, Cressingham Road, Stretford, near Manchester. Sport. 5-in. spools.



Copyright infringed by Grundig

IT is an infringement of copyright in a musical work to reproduce it on a tape even in private, said Mr. F. E. Skone James, a leading authority on copyright law, in the High Court on May 3.

"Suppose," asked Mr. Justice Plowman, "I set up a tape recorder in front of my radio set, record dance music and then play it over at a private dance in my home?"

Mr. Skone James: The recording would be an infringement but the performance of the recorded music at a private dance would not because a public element is necessary in that.

Mr. Skone James, who was appearing for Lawrence Wright Music Company Ltd., and Ascherberg, Hopwood and Crew, Ltd., in a copyright action against Grundig (Great Britain) Ltd., said the proceedings were brought to establish infringement even when the recording was made in private.

Last year at the Audio Fair, Grundig, to demonstrate their tape recorders, reproduced on tape "Jealousy," "Carolina Moon" and "Love, Here is my Heart" in breach of the plaintiff's copyright.

Mr. P. Stuart Bevan, for Grundig, said they bought from another company a tape recording of the three tunes, on which fees had been paid. They re-recorded the tunes so that they could run them at a different speed. They were wrong in thinking they could do so.

Grundig gave an undertaking not to reproduce on tapes or other sound devices the three tunes, and submitted to an order for an inquiry as to damages, and costs.

A Grundig spokesman later told *Tape Recording Fortnightly* that the tapes of the three tunes were recorded at 7½ ips. In order to demonstrate one of their 3½ ips recorders at the Audio Fair, they re-recorded the tapes at the slower speed.

Tape in court — 2

ONE of the rare occasions when a tape recording is used in a court of law was reported recently when a Divorce judge ruled that a tape of a wife's nagging could be admitted in evidence.

The case with which tapes may be edited to distort the original recording has led to a general practice that tapes are not admitted in evidence in court.

This practice was broken by Mr. Justice Lloyd Jones who had consulted a former judge of the Divorce Division—now an Appeal Judge—before making his decision.

He then listened to a ten-minute section of the two-hour tape on a machine in the Divorce Court, after counsel for the wife said he felt he could not object to the recording being played.

A tape recording was used in a divorce case at Glamorgan in 1952, and in the Divorce Divisional Court two years later.



IT is not an unusual occurrence to see a tape recorder at a wedding reception, but our photograph is perhaps a little unique in that this particular machine was operated by the Managing Director of the manufacturer. It is, of course, the Stuzzi that played a prominent part on this occasion—the wedding of Stuzzi's Press Relations Officer. Left to right are Bernard and April King, Best man William Newton, and Mr. K. Short of Stuzzi.

New tape recording magazine

A NEW magazine devoted exclusively to tape recording is scheduled to make its bow in America this month.

The new publication, with a planned circulation of 100,000 will be made available to the public through tape retailers. It will be called *TAPE*, and will appear bi-monthly during the summer and monthly thereafter.

Robert Angus, Editor of *TAPE*, said the new magazine has been designed to fill a need that exists for a publication devoted to the six million tape recorder owners in the United States, plus the millions of others who are contemplating a recorder purchase.

TAPE will sell at 25 cents, ten cents cheaper than *Tape Recording*, hitherto the sole American magazine devoted exclusively to the hobby.

FOR the benefit of visitors to its stand at the British Trade Fair in Moscow, Gestetner has provided an automatic Russian language question and answer telephone. To receive an answer it is only necessary to dial a number and the tape-recorded answer immediately comes through in Russian.

TAPE AIDS BLIND MAYOR

TAPES to replace files is only one of the innovations to be introduced by Alderman Parker, the retiring Mayor of Uxbridge, during his period of office.

This was revealed in Jack Singleton's popular BBC Home Service programme "Two of a Kind" on May 16.

The special issue, entitled "Three of a Kind", featured three mayors who exchanged notes on their experiences during the past year. All three are blind, and Alderman Parker had some encouraging words to say about tape recording.

He is a keen tape exchange enthusiast, whose voice is familiar to many of the listeners to Station KTFA of Berkeley, California, a non-commercial station to which he often sends tapes dealing with life in Britain.

"The only thing I haven't undertaken in my year of office is to preach a sermon," said Alderman Parker who went on to add that important information and circulars have been read onto a tape recorder, and in most cases tapes have replaced files in his office.

Im Wheatter's

NOTEBOOK



Attending a tape course, and recording a christening

IT was a great pleasure to me to attend the Fourth National Tape Course recently held at the Rose Bruford School, Sidcup. For one thing they were all so very keen to learn more about the fun and skill of sound recording on tape, the useful employment of all the material recorded, indoors and out.

This seemed to promise early rewards, especially for the teaching profession so well represented there. I attended some of the sittings to learn for myself and devoted others to instructing students in the efficient use of portable tape recorders.

I was very disappointed to miss the final playback session of their productions but other duties prevented that.

The session on music concrete and made-up sounds demonstrated so ably by Fred Judd, kept us enthralled. The sounds were derived from tones, musical phrases or noises, strung together, played at other speeds and re-recorded. The most fascinating sounds of all, were achieved by snipping off bits of a chord or single note, re-assembling the bits back to front and then listening to the result.

It's not everybody's cup of tea, but what amusement on a dull wet day.

"GRIM AND GAY"

The session reminded me of when we were making the original records of the famous "V" signal derived from Beethoven's Fifth. My boys and girls in the BBC recording channels got a *bit* fed up with the seemingly endless repetition of the "V" phrase from full orchestra to single instruments before the pundits were satisfied, so in the lunch break they assembled rulers, boxes, waste-paper baskets and soon had their version of it on their own percussion mock-up. I still smile when I recall it—anyway

it was Churchill himself who said in those desperate days "Let us be grim and gay."

* * *

IGOT properly caught out recently recording a christening on a Fi-cord portable. One or two points might be worth noting.

First of all I sought permission for the exercise from the Vicar. His initial embarrassment was finally overcome, when he realised that I would be able to conceal the machine under my rain-coat and that the microphone could be hidden.

Secondly, I visited the church the day before and consulted the Verger about the position of the relatives and friends and the arrangements around the font.

In this church the Vicar liked to address the congregation for five minutes as he stood in the main aisle, near the font end of the church. After that the principal characters, mother, father, god-parents and, of course, the baby would be asked to gather round the font. The remaining congregation simply turned in their seats to face the font and as all the

service was taken with the congregation standing no problems were anticipated.

On the day, I arranged to have the inside end of the back pew so that when we turned to the font I would be as near as possible. The large service card I held normally in front of me, and this effectively concealed the microphone. It was understood that quality would be a bit echoey, after all about 20 people in an otherwise empty church with the Vicar doing most of the work on his own was not likely to be high quality. However, it was the atmosphere of the occasion which was required in this tape story being built up for the babe.

Where I slipped up was in not going up to the font with the parents. I thought I was favourably sited, but unknown to me there was a second baby present in the church. Its proud Grandma carried it to the font and stood right in front of me, and the baby looked over her shoulder about two feet from the microphone.

The Baptismal part of the service started and all went well with the recording until Baby No. 2 took fright or something, and yelled and yelled slap into my microphone. Whether she saw and objected to it, or whether in fact it was my own appearance, the nearest in her line of vision, I did not know. Grandma patted the babe's back, she took half a step back and forward to try to pacify it but nothing eased its tears and yells. She screamed all through the service and completely spoiled my recording and her own.

Just one of those things.

The event will still, when edited into the recorded story of Baby No. 1, be a precious memory for the parents and a proper reminder when the young man is old enough to understand. In my book this was a lesson never to be forgotten—when recording christenings move up as near to the baby as you decently can at the font. One, two or maybe six other babies may defeat your best endeavours, but you've done your best.

Incidentally, does anyone want some real life baby screams, copyright no problem?

CLEANING A COMMUTATOR?

— Use a glass fibre stick

A recent correspondent was a bit put out with my advice on cleaning a commutator with emery paper and had never heard of Glass Fibre Sticks.

Let me repeat that the emery paper is superfine grade and so smooth that no harm can be done to the upper commutator segments. To get the black carbon deposits to move whilst the motor is running or being turned by hand in its normal direction glass fibre sticks can be very usefully employed.

These sticks can be obtained at

good engineers and tool suppliers and consist of many glass fibres twisted and bound in the form of a small rod two or three inches long and about 3/16 inches diameter. With the type of motor used in portable tape machines, the access to the commutator is bound to be small. A tip to remember, they are glass and should be handled with respect if you want to avoid painful scratches and bits broken off in your skin. A rubber cable sleeve or a piece of systoflex slid over all but the working end is a good precaution.

TAPE IN THE SCHOOLS

GEOFFREY HODSON

edits the latest news
— and comments

"More use of recorders in schools"

—MINISTER OF EDUCATION

GREATER use of the tape recorder in schools was recommended by the Minister of Education, Sir David Eccles, recently.

He was addressing a conference at London's Central Hall, and spoke of the need for a revival of spoken English. He thought so much information is now being conveyed to the young in pictures . . . that they had not practised a skill which doubtless they found difficult to acquire at school.

"We must develop this revival in spoken English," he continued, "and make increasing use of gramophone records, and tape recorders."

HAVE YOU ENTERED YOUR TAPE?

YOU have exactly a month in which to complete your tape presenting a sound picture of some aspects of school activity, so it is not too late to start now. The rules say that the finished product must not exceed 15 minutes, which means that you must be highly selective and ruthlessly eliminate material which does not add to the sound picture.

The choice is yours whether you make it a classroom project or an after-school hours activity. Both ways have their champions—the former perhaps being the more popular. These are the teachers who do not believe in razor-blade editing. They do not necessarily record in one take, but judiciously use the pause and stop buttons. Any mistakes are erased and re-recorded immediately.

The other brigade does a certain amount of editing and other technical polishing. It is interesting to note that in the two most recent Contests, a representative from each camp has been awarded the first prize (the Grundig Challenge Cup to be kept for a year and the Grundig Challenge Shield to be retained).

Both seem to be legitimate methods, provided that the children are taking an active part in all stages of the project. In the long run the content and style of presentation will count for more than technical gloss.

It is a wise precaution to make sure that all previous recordings have been erased if you are not using a new tape—particularly if you are using a four-track machine. The programme

TAPE SCRIPT

A TAPE script may be considered for the first time in the annual Aberdeen Original Playwriting Competition this year.

must commence at the beginning of the tape and only one track may be used. Tape should be prepared between white or coloured "leader" tapes. Write the name of your school, title of the item, and the speed of the recording (which must be either 7½ ips or 3½ ips) on the leader.

Also identify your tape on the box repeating the same details. You could also add the end sentence or music cue if your sound-picture does not use the whole tape.

QUOTATION OF THE MONTH

"I have found that the tape recorder has improved my grammar in a large way."

—(Joseph M. Craig, aged 11.)

These little courtesies will make life easier for the adjudicators and technicians, and they have the same importance as neatness and clarity of lay-out of written or typed manuscripts.

If you have not already done so, write now to this office for an entry form.

Closing Date: Friday, June 30, 1961.
Good luck!

WE would like to apologise to all concerned for an incorrect statement in our last issue. John Bell, the author of "Recording a play in the classroom," is, in fact, a master at Manchester Grammar School.

IN the classroom the tape recorder is an aid to teaching; it may be used to reproduce tapes (for example, recordings of BBC school broadcasts); it may be used to record and replay classroom work; or it may be used with film projectors. The criteria are: Is the machine doing something that the teacher cannot do, or is it doing something better?

After school hours tape recording can come into its own as an art activity in itself.

This month an example is given of an outstanding piece of classroom work. We are holding over till next month our new series on School Tape Clubs.

TAPE recordings of parts of programmes and advertisements provided first-hand material for discussion. Some boys with tape recorders contributed to this. In this way the class could have a "second look" at controversial programmes, which helped more detailed analysis.

The tape recorder was also used for more creative work. Boys wrote radio scripts — documentaries, a radio "Tonight" feature, and several humorous sketches and talks gently debunking some television programme or personality.

In other words, the tape recorder fitted into the general pattern of the scheme without force, and made a useful contribution in its own right. As many teachers have found, it was a useful piece of apparatus to have at a Parents' Evening which concluded the project.

"Thinking about Television" was a scheme devised for 14-15 year old boys in a London comprehensive school last term to encourage critical appreciation of television programmes and to stimulate work in English by using the lively and topical material of television. The project was led by J. K. Turner, the Head of English Department.

A detailed questionnaire of viewing habits, preferences, etc., was completed by 250 fourth-year boys. The answers revealed that only two had no television set at home; that 84 per cent preferred ITA programmes; and that 94 per cent enjoyed "Westerns." Average weekly viewing time was shown to be 2½ hours on five evenings, the most popular hours being between 7 and 9.30 p.m. Late viewing, after 11 p.m., was usual among 25 boys (14 per cent).

The main purpose of class discussion was to encourage boys to give language to half-formed opinions and ideas and to listen to other people's points of view. The viewing and the discussion stimulated their imaginations and provided the springboard for much follow-up work. This included tape recording.

RECORDING IN A STREET MARKET

ANOTHER SPECIAL ASSIGNMENT BY DENYS G. KILLICK

THERE are a few, a very few, recording assignments on which it is almost impossible for the amateur enthusiast to fail to bring back excellent tapes. One of these rare occasions is when he takes his equipment on a stroll among the throbbing activity of a street market.

The atmosphere is one of excitement. As the vendors explain why their goods are offered at no more than a fraction of their cost price, the fatal lure of something-for-nothing grips the crowd. As more and more people gather round, the salesman enjoys himself tremendously; glib exaggerations drop like honeyed snares from his lips, the sparkling witticisms with which he laces his patter draw equally sharp rejoinders from wags among the spectators. The only danger to the recording engineer is that he is quite likely to become so mesmerised as to completely forget properly to modulate the machine or to keep an eye on the progress of the tape.

Everywhere there is sound. Raucous sound projected forcibly from behind the summit of a delicately balanced pyramid of chinaware.

" . . . all 'and painted, lady, every one a work of hart and guaranteed genuine. No, don't go away dear, come 'ere and I'll tell you what I'll do . . ."

Confidential sound wafting across a battery of glass bottles and retorts



generously mixed with the noxious aroma of their dubious contents.

" . . . so this 'ere doctor gives me the formula as a reward for savin' 'is life, not that I wants to boast of what I done because I am now giving all of you the opportunity . . ."

" 'Ere y'are, ducks. Last one I got and just your size, dear."

" Jellied Eels! They're luvverly! "

" Oooo! Look at that, Alf. Isn't it cheap! "

And, as if this isn't enough, a succession of street musicians thread their way through the maze of stalls to provide ready-made " mood music " on the spot. Could one ask for more?

To remind myself once again of the pleasures of recording such a subject I went on a recent Sunday morning to Petticoat Lane, in London's East End, at the request of one of our lady readers. Although this is essentially an easy subject, I realised afterwards that the success of the trip was almost entirely due to the careful preparation of the equipment and the use of a little forethought before setting out.



I should hate to attempt a project like this in pouring rain or in a gale of wind. One advantage of the established street market is that it is invariably held at a fixed time on a certain day of every week. There's no need to work under adverse conditions. Wait until the weather is in your favour. As I sit writing, the sun is streaming through my study window and scarcely a breath of air is stirring outside; an ideal day for outdoor recording and absolutely right for this particular subject. It's surprising what a difference a few bursts of cheering sunshine can make to the

wit and temper of a crowd; to us that difference can be heard as just another " good " tape or a startlingly brilliant recording.

Having noted the weather forecast and weighed up my chances, I always spend an hour or two on the equipment itself.

The machine is first tested and then the heads are cleaned with no more than a trace of methylated spirit. The azimuth alignment was pre-set in the factory but if adjustment was necessary it would be done now. Finally, an application of the defluxer ensures there will be no residual magnetism in the heads to cause objectionable hiss in the final recording.

Portable battery machines won't work without power, so that's the next item to check. The four little cells in my Fi-Cord can be recharged when exhausted, so I make sure not only that the set in the recorder is fully charged but also that I have an adequate supply of spare charged batteries to take with me. I took two reserve sets to Petticoat Lane.

The advertised life of these batteries is 1½ to 2 hours when recording at 7½ ips, at the end of which time the failure of the motor indicator light to glow shows that they need to be replaced. I have never attempted to run my machine for that length of time on a single set of batteries. To do so would be to ask for trouble.

The Fi-Cord can be completely relied upon to operate at a rock-steady 7½ ips so long as adequate power is available, and by changing the cells after about every thirty minutes of recording time I eliminate all concern about motor speeds and concentrate on the business in hand without bothering about the relative bright-

The author, left, combines the roles of explorer, experimenter, artist, teacher and roving reporter in this exciting series. Suggestions are invited for subjects he can tackle and describe in future issues.

RECORDING IN A STREET MARKET

“ . . . A succession of street musicians thread their way through the maze of stalls providing ready-made ‘ mood music ’ . . . ”

ness of the indicator light which, by the way, can be difficult to judge in brilliant sunshine.

If you own a machine using the more conventional dry cells I would strongly advocate disposing of them no more than two-thirds of the way through their life.

A moving coil microphone is a necessity for this kind of recording and I am fortunate in having the choice of two equally fine instruments, a Grampian DP/4, with a Lustraphone LFV as an alternative.



Checking a microphone involves a little more than muttering, “ One . . . two . . . three . . . ” into the business-end and hoping for the best. Check the connections carefully, taking plugs apart and making sure that no soldered joints are coming adrift. It’s very easy for a tiny whisker of wire to work itself loose and cause a short-circuit. In the home or the studio the remedy is simple—standing on the street corner it’s not. Is the microphone plug a good fit in the socket on the recorder? If it’s sloppy it could be pulled out unnoticed in a crowd of people. Check it.

Finally, the tape. I usually guess at the length of time I anticipate recording, calculate the quantity of tape required based on single track operation at 7½ ips, and then actually take at least half as much again. There’s nothing more frustrating than to find yourself running out of tape or battery power in the middle of a recording session, but careful planning will ensure that it doesn’t happen.

All the tape I took to Petticoat Lane had been fully erased on one of my standard mains machines. I know most battery machines are equipped with erase heads (the E.M.I. L2 is a notable exception) but to rely on them to remove all traces of a previous

recording out in the field is a slovenly habit and there’s no excuse for it.

Even if using brand new tape it should be fast wound backwards and forwards a few times on standard equipment and I always do a short test recording on every new spool before taking it out. I once had a dud seven-incher from a very reputable manufacturer and from that day on I have always tested every spool of tape before trusting it on an important job. Of course, it has never happened since and probably never will, but I believe in making sure.

One last thing is so childishly simple that I hesitate to mention it, and yet I know from experience that in the heat of the moment we are all capable, myself in particular, of doing the stupidest things. My newly-cleaned and tested tapes are all placed inside plastic bags before going into their cardboard boxes. When putting new tapes on the machine during the progress of recording a special point is made of *never* replacing a recorded tape in its bag; this is just folded around the spool and placed in the box like that.

However mixed and muddled my supply of tape may get I can always tell at a glance which spools are recorded and which are not and there’s never the slightest danger of wiping out the valuable recording I took a few minutes earlier.

Similarly, my boxes of batteries have a slip of card under the terminals bearing the date on which they were charged and this is thrown away when they are slipped into place on the



machine. The exhausted ones go into their box the other way round so they could never be mistaken for a charged set.

I was playing back my Petticoat Lane recordings the other day to a friend who is rather proud of the quality of some of his own work. The tape I chose was one of a group of street musicians, a trombone, trumpet, banjo, accordion and drum with market sounds in the background.

I laced it up on my faithful old Grundig TK 820, which is fed via a Leak Varislope amplifier to a Goodmans 15/4 speaker assembly. He listened to it in dead silence with an almost incredulous look on his face, and the expression in his eyes said, “ You’ve done it again, you old blighter! ”

And yet there was nothing very clever about it at all. If the amateur cares to take the same trouble that he would expect a professional to take he has a right to expect to get a degree of professional polish in his final recording.

Believe me, there’s no subject more worthy of the trouble taken than that gloriously noisy conglomeration of humanity which regularly assembles in every town and city of our land whenever the stall-holders display their wares at the beginning of market day.

BRITISH AMATEUR TAPE RECORDING CONTEST 1961



Another glittering prize

A GLITTERING silver spool, holding gold "tape" and standing twelve inches high, is the latest prize to be awarded to the British Amateur Tape Recording Contest. This is the prize donated by Wilmex (Distributors) Limited and presented to the Contest by the Beverley Sisters at the recent Audio Festival.

The *Irish Trophy*, as it is known, will go to the best entry in the Documentaries and "Reportage" section of the Contest.

The impressive array of other prizes for this high spot in the amateur recordists year, are illustrated below. This year one of these could be yours. Your chance to produce the "Tape of the Year" for 1961 will soon be over. Don't delay. Remember the closing date is JUNE 30.

THREE SILVER CHALLENGE CUPS



Emitape Challenge Cup



Grundig Challenge Cup



Acos Cup

THE usual prizes from leading manufacturers in the tape industry will again be awarded this year. These awards are as follows:

The best entry in any class will be selected as "The Tape of the Year" and will be awarded the *Emitape Challenge Cup*. This is to be held for one year, and has a replica to be kept permanently.

The best Schools tape will win the *Grundig Challenge Cup*, with the Grundig Shield for permanent possession.

The *Acos Cup* is awarded to the best

entry in either the Music/Speech or Compositions classes.

In addition to these awards, *Tape Recording Fortnightly* offers a prize of ten guineas to the best entry in each of the seven classes.

Messrs. E.M.I. Sales and Service will be hosts to all the winners at a special Emitape luncheon at the Savoy Hotel, London.

Grundig (Great Britain) Ltd. will organise a special social gathering for the pupils who help to produce the best schools tape.

TWO other special prizes will be awarded. The first is the *Wyndor Gold Medal* for the competitor who submits the best technical production. A second medal from Wyndor will also be presented to the best technical production in the *International Amateur Tape Recording Contest*, to which all the winning entries of the British Contest will be forwarded. This year the I.A.T.R.C. will be held in Berlin.

The best Club Tape will win the *Amphlett Club Trophy* awarded by the Federation of British Tape Recording Clubs.



A WRITER AND A MUSICIAN SAY "A TAPE RECORDER IS A MUST!"

FOR the first time in my life I can understand the excitement which provoked Archimedes' cry, "Eureka," for that is how I feel after a tete-a-tete with a tape recorder. True, my "discovery" is of no academic value; yet its importance to me as a free-lance writer cannot be over-emphasised.

I have long been familiar with the bogey of getting onto paper the material for my manuscripts. Because I am not one of those gifted beings who can pour their thoughts straight into a typewriter, I have to take the more arduous path of thinking, marshalling my thoughts and clothing them in fitting language. Unfortunately, in the process I run into a snag; my pen cannot keep pace with my thinking. The inevitable result is that while I am mentally wrestling with the phrasing of one thought, others vanish and I must spend precious time in trying to recapture them.

Even if I am partially successful, more time is necessary to re-write them into a logical and coherent sequence. Of course there would be no problem if I could only find someone to take down my thoughts as fast as I voiced them.

But where to find that ever-ready "someone" was equally difficult until by chance a tape recording came into my hands. Less than an hour later I realised I had found the solution to my problem and my unspoken "Eureka" was as sincere as it was justified. It took me precisely 15 minutes to speak an article to my silent "friend." A further 25 minutes in staccato playback enabled me to transfer the words to paper where the job of editing and polishing up was simplicity itself. From the time I first switched on the tape machine until the manuscript was ready for typing, a total of 55 minutes had elapsed, which made it the quickest-ever article I had ever turned out.

That it was no "flash in the pan" was obvious when I called on my tape "friend" for another article. This indeed was a severe test because the work had been commissioned by an editor who had made the job more difficult by stressing particular points in its treatment and by specifying a *minimum number of 2,500 words*.

I had already made several attempts to pen the article but I tore them up because they were not satisfactory. While the material was clear in my mind, its transfer to paper lacked spontaneity and cohesion. It was then I thought of the tape recorder. Perhaps it could make the going less difficult.

Any doubt about its capabilities vanished when I voiced my thoughts in

A WRITER AND A MUSICIAN SAY "A TAPE RECORDER IS A MUST!" "Two outstanding advantages"

—Daniel F. Macrea

the presence of the "mike." As the playback revealed, the article was exactly as I had visualised it, and it had beaten the minimum word limit. In pruning it to 4,500 words I had ample left over for a further article. The time taken from speech to typed manuscript was three hours, which was a saving of at least five hours on my normal method. My critic's comment that this article, like its taped predecessor, had an unusually smooth flow was confirmed inside a week by the two editors concerned; both manuscripts were immediately accepted for publication.

It may seem impertinent for one whose knowledge of tape recordings is limited to how to stop and start, to record and playback, to write on their good qualities. But I must pay tribute where it is due, and where my free-lance writing is concerned, a tape machine is a godsend.

Thanks to this invention I can get the entire material for my manuscript "stored," in orderly array, in a matter of minutes. I know it is there for me to call on at any time. No longer do I dread interruptions such as rings on the phone or the door; I just switch off and attend to them. When I resume, I re-

wind a few turns of tape and playback, and the original vein of thought and expression is recaptured. So much am I in tune with the machine that as I stop and start the playback for transcription, I find I can write the oncoming words as well.

Another discovery of this staccato playback was that my mind was stimulated to yield additional thoughts on particular points. When this happened, I switched off, jotted down the fresh matter on a spare sheet with a mark in the "taped" page, and, after the run through, inserted the extra material. The happy result is that I can cram my manuscripts with relevant facts and forget padding.

To me as a magazine writer, in every English-speaking country in the world, the tape recorder has two outstanding advantages. Firstly, it stores in an accessible form the article through every stage of its creation; secondly, it does the job as fast as I can think out loud. What it saves in mental fatigue I cannot even guess at. Thanks to this novel means of communication much of the physical drudgery in my writing has been removed, the time factor of composition reduced,



The author in his "den." In front of the clock hangs a microphone to store the spoken thoughts.

and my literary output increased and speeded up. No wonder, then, I feel like echoing Archimedes' "Eureka"; in my tape-recording friend I certainly have found it.

ALTHOUGH the tape recorder is becoming increasingly a creative instrument, parallel with the cine camera, there is little doubt that, among musicians, it will always primarily be a "music reproducer."

The tape recorder gets high marks, right from the word "go." Any musician engaged in a live performance cannot possibly devote his whole attention to the effect produced by his performance. To listen critically to one's intonation and interpretation demands the whole attention. In performance, one must usually concentrate on reading the music, having the right finger in the right place at the right time in passages of technical difficulty (in the—almost invariable—event of having had insufficient time for preparation!), perhaps following a conductor—and the list could go on.

The obvious solution is to concentrate wholly on these technical problems, while recording one's work.

Except in cases of exceptional talent, it is quite normal for bitter disillusionment to follow. But, having heard one's performance remote from all the physical sensations of playing, one can now set about correcting matters deserving adverse criticism.

Any musician short of the virtuoso

"Worth its weight in gold"

—C. J. Baldwin

class (who is above requiring the services of such devices) finds a tape recorder worth its weight in gold (and that, with a tape recorder capable of good music reproduction, is very considerable).

But if the tape recorder can help one to learn music, it most certainly cannot teach it. In fairness, however, it must be stated that it is only valueless as a teaching instrument when used as a "record player."

Until fairly recently, the writing of music was a very slap-dash affair, and, as if overwhelming abbreviation was not enough, discrepancies inevitably occurred during copying. Many people have become authorities on various composers, and have done much research into the correct methods of performance. But, quite clearly, no one can say "I am right, this is how Bach meant it."

Why, then, should not composers record their compositions as they intend them to be played, now that tape recorders are popular? It is a curious fact that many composers cannot produce a satisfactory performance of their works, and so they must rely on written music, and its interpretation by performers.

To the solo musician, his art must be a very personal thing. One should be able to detect from his performance the emotional effect which the music has

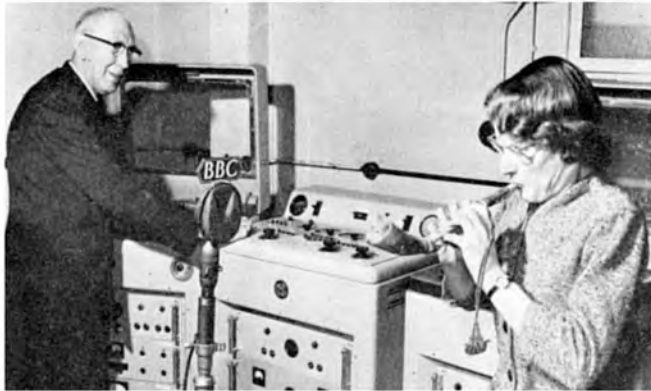
upon him. If he tries to duplicate the recorded performances of even the greatest musicians, his own performance will suffer. His playing will be mechanical, characterless; he will become an automaton. Without the individuality of performers, music would die.

We have been hearing recently of tape recordings used instead of text books. It is astonishing that in the field of music, where one might expect to find the tape recorder in greater use than anywhere else, it can only be used to real effect as a fault finder.

It is essential to the appreciation of music to prevent oneself becoming "brain-washed" by one performance, until all others sound wrong—and here again, of course, tape scores over disc. Hear several performances of the same work. You may be surprised to find that they are about as similar as chalk and cheese, and there will be one for which you have a personal preference.

As a footnote, I must explain my very careful reference to *tape* recorders: any conscientious musician thinks of a *recorder* as a wooden instrument, flute-like in tonal quality (with imagination), which is taught in a great number of schools, to the annoyance of adjacent classes!

Musique concrete at first sight seems to offer unlimited opportunities to the ingenious experimenter. But does it? In fact there are several limitations involved—particularly when changes of pitch are involved. And this is a case where knowing the problems will take the amateur at least part of the way towards solving them



SHAPING SOUND—3

TRANSFORMATIONS

Below:

Spinetta Keyboard. This is a form of electronic organ and has tone controls to vary the quality of a wide range of harmonic combinations. This is one of the sound sources available to the Radiophonic Workshop.

WHEN a composer sets pen to paper he knows that he has a large number of independent variables at his command. He specifies each instrument and the way in which it is to be played: the pitch of each note and its duration; and the relationship in time and pitch between successive notes and between different instruments. But however much is specified, there is always still some room left for interpretation by the performer.

This leads us to the first and most obvious difference between conventional music and *musique concrète* for the newer form exists only in its final state, as paintings or sculpture do. It is not performed, but merely replayed. And the work exists only for as long as the recording itself—or copies from it—will last. (Although, to be sure, the absence of performers has often worried the composers, several of whom have endeavoured to introduce a live element into this canned art.) In this respect, at least, it is like electronic music (from which it otherwise has certain fundamental differences).

Musique concrète is made by recording sounds, transforming them in various ways, and then cutting and assembling them in a montage. And the core of this process is the transformation.

Now, when a sound is originally being made, its creator generally has a fair degree of control over various characteristics of the sound—its pitch, timbre, duration, and envelope (i.e., the way in which the “attack” and decay are related to the main body of the note).

Daphne Oram and Pipes. This photograph was taken in the BBC Radiophonic Workshop before Daphne Oram left to set up her own studio in the country in Kent. A point about the pipes she is playing (An Arabic double reed *mijwiz*) is that they make a good subject for transformation not only because their tone is suited to the job in hand, but also because as an original sound they will not be too recognisable!

Naturally it is usually possible to exercise a greater degree of *independent* control of these variables if a musical instrument is chosen as the sound source, rather than some “concrete” sound effect. (This leads to what at first sight may appear to be a rather surprising result: that musical sources are often preferred to other sounds. After its adventurous early history *musique concrète* soon tended to return to the conventional in this one respect at least.)

But once this original recording (or series of recordings) has been made, all of these formerly independent variables are locked together and it is not at all easy to treat them separately. For instance, one of the most important types of transformation is change of pitch. And the only convenient way of changing pitch is to replay your original recording at a different speed—which will, of course, change every other quality as well.

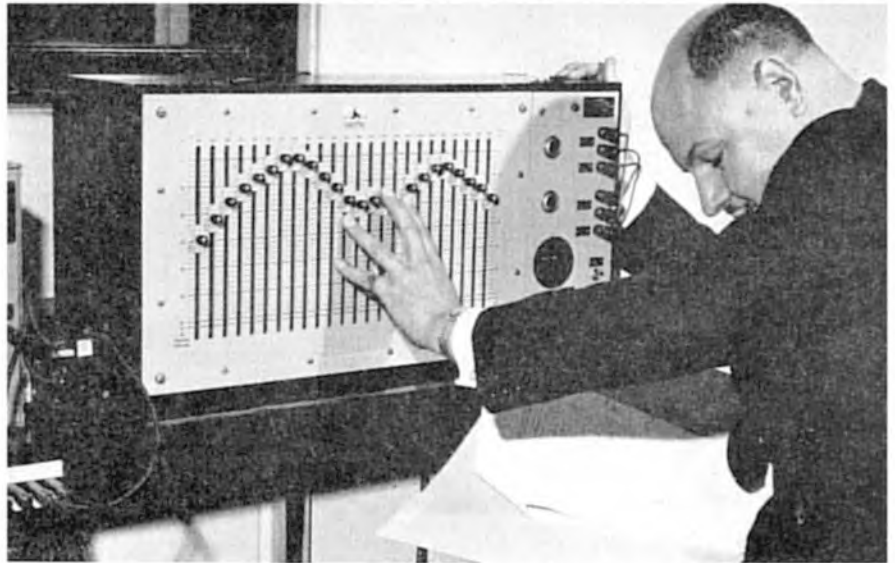
Suppose you play a $3\frac{1}{2}$ ips recording at 15 ips. For a start your repro. characteristic will be wrong, of course. But this is a relatively minor point, because all the other things which happen are so drastic in their action that to give or take a few decibels here or there on the frequency spectrum is only a drop in the ocean of change. So, apart from this small element of distortion you have achieved your first objective—the pitch has gone up two octaves.

But with this, the duration has come down to a quarter, the attack and decay characteristics have changed so that the sound may now be a great deal more percussive than before. The timbre has changed to be something like that of an instrument a quarter of the size; and so on. Everything changes together. And if this “block” change is not going to be satis-



SHAPING SOUND—3: TRANSFORMATIONS

By Alec Nisbett



Third-Octave Filter. Desmond Briscoe puts a "shape" on a filter in the BBC Radiophonic Workshop. Made by Albiswerk Zurich A.G., this device splits a sound into component intervals of about a minor third, which can then be individually attenuated by up to 60 dB, or cut out completely. The slides are labelled in cps starting with 94, 113, 136, 163, 196 . . . and so on. Thus, a band of four of these intervals nominally amounts to rather more than an octave. Coloration, due to the shape shown here (with dips of less than 30 dB), may be fairly subtle: in terms of speech quality, there will be a reduction in intelligibility of less than one per cent

factory to the final result, its no use trying to fight it; you'll have to try other types of transformation instead—and only the most modest changes in pitch.

One sound source which usually gives pretty disastrous results when subjected to a speed change, is the human voice, and particularly the singing voice. The basic reason for this is one which I have not already mentioned: vibrato.

The acceptable degree of vibrato falls into a very narrow range: it must be somewhere between six and twelve cycles per second (the upper figure is generally considered rather ugly). Outside these limits, the effect would be those of wow or flutter (the vibrato range can, in fact, be taken as dividing the two).

Only the smallest speed change is possible without taking the vibrato outside its normal range; and this element of the sound, one which may not previously have been noticeable, may suddenly become painfully obvious. Doubling the speed automatically produces a characteristic effect: it sounds like a small, vibrant-voiced animal (which, it must be admitted, does have its commercial uses—as in the "Chipmunk" records and many other gimmick pops).

And although it is possible to avoid the worst of this by keeping the changes small, it's as well to remember that difficulties may crop up in other directions. For whereas a male and female voice may differ in fundamental by an octave, the *formant* ranges (i.e., those parts of the vocal sound which are emphasised by the throat, mouth and nasal cavities and which are used to give the main characteristics of speech) are, on average, only a semi-tone or so apart, and vibrato ranges are also little separated. Small changes of pitch there tend not to change the apparent sex of a voice, but rather to de-sex it.

I remember a programme in which a character in some odd mental state had to

talk to an apparition of his wife; and since she was to be presented as a figment of his imagination, we created "her" side of the dialogue by dubbing in recordings of the man's voice speeded up about 8 per cent, i.e., a little more than the smallest interval on a piano. An actor with a light voice had been chosen, and the transformation gave a rather throaty "female." We were lucky: just for that once, it worked.

As an illustration of this try listening to the odd voice quality you get by playing a 33 of Frank Sinatra at 45 rpm: the effect is not totally unlike the voice of Eartha Kitt (part of the reason for this is that Miss Kitt often appears to have rather a rapid vibrato).

Coming back to conventional music sources (and popular music), I remember also doing some work with a "double-speed piano" played by Dennis Wilson. The first recording was rather slow and careful (preceded by a spoken "One, two, three, four" to give the tempo on replay). It was played back at double speed, and a conventional piano accompaniment was added. (Further playbacks and dubbing-in were then used to add any more ornamentation that might be required.)

The double-speed sound was no mere variation on ordinary piano quality. It sounded like a new instrument and was treated as such in the musical arrangement. But in *musique concrète* it is frequently regarded as an advantage to start with a sound source that is not as recognisable as one of the more usual orchestral instruments—the characteristic changes wrought by the transformation are not then so obtrusively apparent.

Is it possible to change the pitch without introducing all these awkward side effects? The answer to this is that under certain circumstances it can be done—but at a cost. Some years ago a "time-stretcher" was invented, an ingenious device which is like a normal replay machine except that instead of the tape being drawn across a single repro. head it passes instead around a capstan into which several repro. heads are fitted. This capstan can be rotated so that the heads "chase" the tape (and thus reduce the pitch of replay without affecting duration). Or it can be rotated in the opposite direction, lifting the pitch.

The disadvantage of this sort of arrangement is that there is bound to be some sort of a discontinuity at the moment when one repro. head takes over from another, and that this creates a characteristic form of distortion.

The only other circumstance in which a pitch change can be made without everything else going haywire at the same time is when an absolutely steady note can be made into a loop. But it's surprising how rare a really steady note is!

Other sorts of transformation include filtering, surgery on the tape, reversal of the sound, the addition of reverberation and so on—but however hard they persevere, newcomers to the form are likely to wind up with feelings of frustration simply because of the way in which the various qualities of a recorded sound are so irrevocably entangled together.

One way of trying to control the final result is by changing the quality of the

(Continued on page 32)

BUILD YOURSELF THIS TIME SWITCH

A COMMERCIAL - MADE time switch, suitable for switching a tape recorder and wireless, or other electronic apparatus on and off at pre-determined times, is an expensive device.

Constructional details are available for home-made time switches, but most of these are far from simple. Ex-Government, or surplus switches suitable for modification are increasingly hard to come by, so this useful device is denied many tape owners. The switch to be described can be built in less than an hour by anyone who can use a screwdriver and soldering iron, and the total cost should

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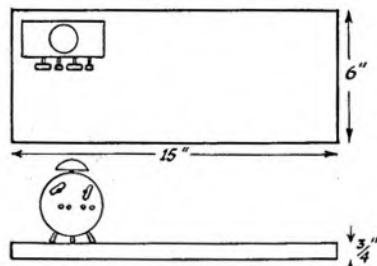


Fig. 1

not come to more than about 45 shillings.

The switch uses two alarm clocks and a relay, and can be set to switch any electrical device on and off at pre-determined times, up to a maximum of twelve hours from the time of setting. One alarm clock could be used if the switch was only required to switch the apparatus on.

First, suitable alarm clocks of the same size should be purchased. As these are the most expensive item, care should be exercised in their choice. New clocks can be purchased from about fifteen shillings, but there is no reason why second-hand clocks should not be used. Before buying

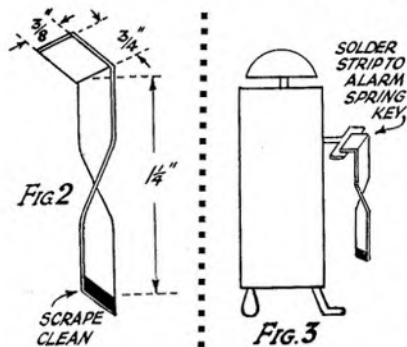


Fig. 2

Fig. 3

the clocks, it should be ascertained that the winding key for the alarm spring turns round as the alarm spring unwinds.

Next, a baseboard should be cut; this should be about 15 by 6 by $\frac{3}{4}$ inches, but since clocks vary in size so much, all measurements should be regarded as approximate. One clock should then be mounted as in Fig. 1.

The method of mounting will vary with the clock. If it has three legs, holes could be drilled in the board, and the legs pushed in. If the legs can be unscrewed, or if the clock has a base, it could be simply bolted or screwed to the board.

Next, two thin strips of metal $\frac{3}{16}$ by 2 inches should be bent and twisted as in Fig. 2, and the bent end should be soldered to the alarm spring key

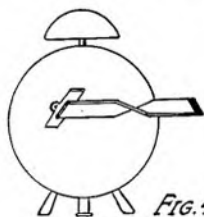


Fig. 4

of each clock, as in Fig. 3. If the clocks are small, the strips may have to be shorter, so that they do not foul the baseboard as the key revolves.

The alarm key on both clocks should now be turned to the position shown in Fig. 4, and the position of the second clock found as in Fig. 5, so that the ends of the strips overlap slightly, and are in line. The second clock can now be mounted as the first.

The alarm springs of both clocks should be fully wound, and small blocks of wood screwed to the base-

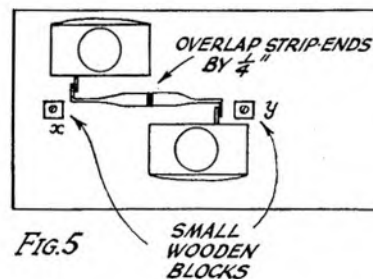


Fig. 5

SMALL WOODEN BLOCKS

board at X and Y in Fig. 5, to act as stops to prevent the metal strips from completing a full revolution.

Electrical contact is made with both clocks by scraping a little paint off the case and soldering on a wire. If the clocks have a plastic body, the wires can be soldered to the shafts of the alarm winding keys. The other ends of the wires are brought out to terminals on the board.

The working of the two clocks as a switch to actuate the relay can now be seen. The alarm of the first clock is set to switch the device on, and the second to switch it off. The metal strips of both clocks are set as in Fig. 6. When the alarm in clock 1 goes off, the spring unwinds and electrical contact is made between

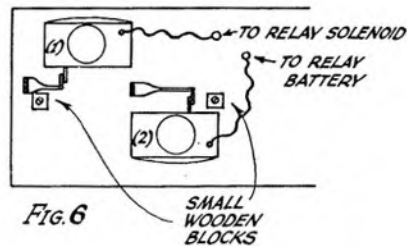


Fig. 6

SMALL WOODEN BLOCKS

the two clocks when the metal strip connects with the strip of the other clock. This will switch on the relay to be connected to the two terminals.

BUILD YOURSELF THIS TIME SWITCH

When the alarm in clock 2 goes off, the unwinding spring disconnects the attached strip from clock 1, and both strips are stopped by the wooden blocks. These operations are shown by stages in Fig. 7.

The relay may either be purchased ex-Government, or made in the home. An iron bolt about 4 inches long makes a suitable core, and the threaded end of this can be secured in a block of wood. A cardboard former can be made for the winding, with glued on cardboard cheeks. The winding should be of enamelled copper wire, about 36 s.w.g. The turns should be wound evenly, with a thin piece of greaseproof paper inserted between each layer. The final layer can be bound with insulating tape.

The contact arm can be made from spring strip steel, such as the steel bands used to secure packing cases. One end should be mounted between two blocks of wood screwed together, and then screwed to the board. Silver wire should be soldered to the end of the arm so that it connects with a silver contact set in a block of wood

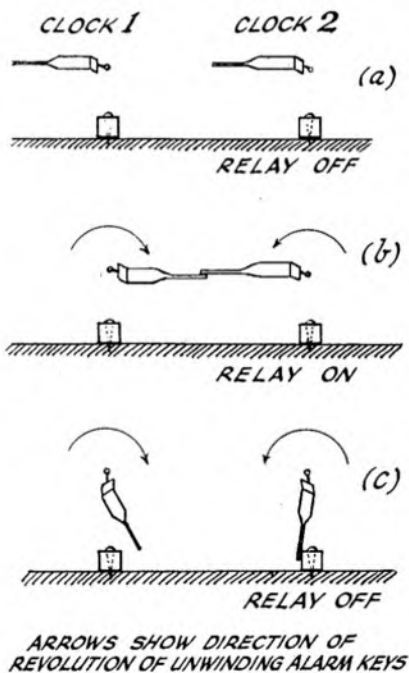


Fig. 7

N.B.—The left-hand strip, in the centre sketch above, will be brought to a stop above the right-hand strip, and not as shown.

screwed to the board, when the contact arm is bent half an inch out of the straight.

The solenoid can now be mounted on the board, and its working checked with a bell battery. Do not forget to scrape the enamel off the ends of the copper wires. The exact position of the solenoid may have to be found by experiment. The relay is shown in Fig. 8.

One of the terminals from the clock is connected to the battery, the other

THESE ARE THE ITEMS YOU WILL NEED

Two alarm clocks, with alarm spring keys which revolve as the alarm rings.

Baseboard, approximately 15 by 6 by $\frac{1}{4}$ inches.

10 inch steel strip (from packing case) for clocks and relay.

One ex-Government relay or 4 inch iron bolt, about 3 oz. 36 s.w.g. enamelled copper wire, 2 inches of thick silver wire or relay contacts, cardboard, screws, glue, insulating tape, solder and iron.

Plastic sandwich box, about 5 by 5 by 4 inches.

Small blocks of wood.

Mains plug, wire and two-pin 2-amp socket.

terminal to one of the solenoid wires. The other solenoid wire goes to the other battery terminal.

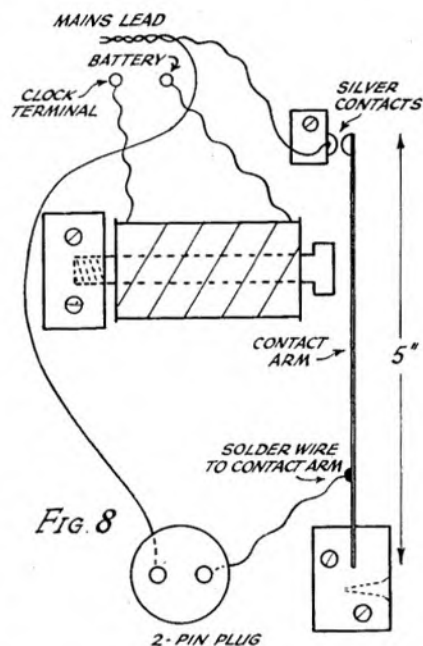
A two-pin 2-amp plug socket is mounted on the board; a wire is soldered to the contact arm and is connected to one terminal of this plug. One wire from the mains lead is connected to the mounted silver contact; the other wire goes to the other socket of the two-pin socket.

Since the relay has exposed parts which will be "live" with mains electricity, it is a good idea to fit a safety cover. A transparent plastic sandwich box is suitable for this. If desired, a case for the whole switch

can be designed. Never attempt to adjust the relay with the mains plug connected to the mains.

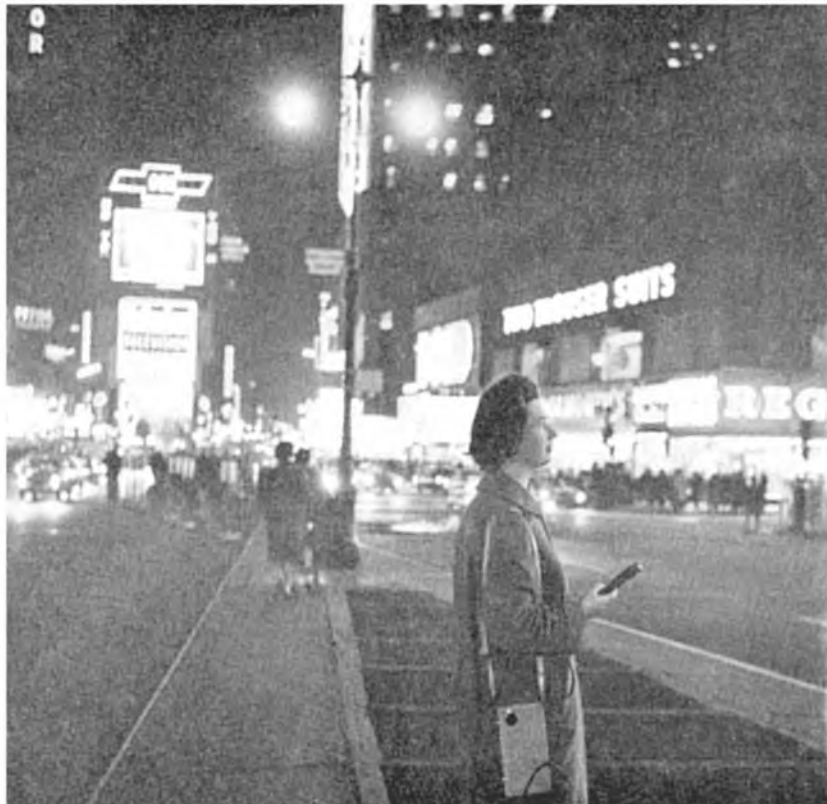
To use the time switch, all apparatus that it is required to use, such as a pre-tuned wireless and tape machine, should be plugged into a multi-plug, inserted into the socket on the board. The clocks and metal strips should then be set and the whole unit connected to the mains.

It should be remembered that not all tape machines can be used with a time switch; to check whether it is possible on your recorder, start the machine recording and set the gain control so that the magic-eye just closes for the loudest sounds. Disconnect the mains and re-connect after a few minutes; the machines should continue recording as before.



The drive of some machines is not powerful enough to start the tape instantly with the pinch wheel engaged, but if your machine does start, it can be used with the switch.

The uses of a time switch are many and varied: recording a wireless programme when "out," switching off the wireless, tape or gramophone last thing at night, or switching on a kettle, light or wireless in the morning are some possibilities; others will suggest themselves.



The author's wife with a Fi-Cord in Times Square

The second of a series of three travel articles

By

A. C. WILSON

IT was a beautiful morning when we arrived at New York's Pennsylvania Station with two clear days ahead of us and no pressing engagements to interfere with sight-seeing.

We left our luggage at the station and took a taxi straight to the Empire State building; if visibility is good—and a meteorological report on the ground floor informs visitors of the conditions they may expect to find at an altitude of 1,000 ft.—there is nowhere like the observation platform for a view of Manhattan and the surrounding country.

The skyscrapers in the down-town business streets; the green rectangle of Central Park; Broadway's curve contrasting with the straight lines of the avenues running north-south across the island; the Atlantic passen-

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WITH A TAPE RECORDER IN NEW YORK

CENTRAL PARK ZOO — TIMES SQUARE — THE WAIL OF A POLICE CAR — A TAXI DRIVER

ger ships, like water-line scale models, lying at their berths on the North River; all these features fix themselves in your mind as you look at them spread out below—and they remain in your memory far better than the details of a map would do, as you move about the city afterwards.

It was a fine day, but there was a strong wind blowing when we reached the top. Outside on the platform it moaned and whistled through the wires of the protective screen on the edge of the parapet, and this sound was the first that we recorded in New York.

Afterwards, when we had lunched in the cafeteria high above the street, we descended to ground level and walked slowly north along Fifth Avenue and into Central Park. We were lucky to come upon an unexpected—and very noisy—squabble among a group of seals in the zoo, and this we were able to record.

Our hotel was on 43rd Street, just off Broadway and Times Square, and we filmed the lights and recorded the sound of the traffic and the passers-by later that evening.



There is something quite individual about the sounds of the world's great cities; recordings made at Piccadilly Circus could not easily be confused with the noise of the crowds and the traffic along the Champs Elysee (even though, nowadays, Parisian motorists may not sound their horns in the capital); and the recordings we made in Times Square are as distinctively American as the street cries we recorded in Athens are typical of Greece.

Although it was now the middle of November, New York was basking in the sunshine of an Indian summer and the temperature rose into the sixties. The central heating had, nevertheless,

been turned on in our hotel and at night it was impossible to sleep unless the windows in our room were wide open.

Not far along 43rd Street is a fire station and we lost count of the number of times there was a fire call to disturb our slumbers. New York fire engines are fitted with a device not unlike a fog-horn, though rather higher-pitched, which blasts off at regular intervals, accompanied by the wailing sirens of their escort of police cars; this ensemble is audible over a wide area, and seems to perform not only on its way to the scene of the fire, but also all the way back to the station after the flames have been put out.

We could not honestly say that we had become accustomed to this racket by the time we left the city, but at least we knew what it was when we were woken by it; another noise, which usually started somewhere outside the hotel in the early hours of the morning, sounded something like a pneumatic drill and something like a space ship in a science fiction play, but we never discovered its source. We made a recording of it, however, and another of the cavalcade from the fire station—and, oddly enough, by regarding them both as sounds to be put down on tape we found the noises they made much less infuriating.



On a previous visit to New York I had attended a debate at United Nations headquarters. Meetings of the General Assembly are broadcast by a New York radio station, so this time I recorded part of one of them, on the occasion when Mr. Boland, the Irish President of UNO, called upon the leader of the delegation from the Philippines to open a debate on the Congo.

This took much less time than a visit to headquarters would have done, and

gave us the opportunity to fulfil another ambition of ours.

Few of those who have visited the United States by sea and, from the deck of their ship seen the skyline of Manhattan appearing out of the early morning mist, will forget the beauty of the scene. If the visitor is forced to come into New York by train, as we had been, the next best thing is to take the Staten Island ferry where, from the boat on a fine day, he will be able to watch the interplay of light and shade on the skyscrapers on both the outward and return journeys.



From the streets of Manhattan the buildings are—almost literally—too much on top of one; from only three places can they be seen individually and, at the same time, in relation to one another: Brooklyn, the deck of a liner, and the ferry.

We determined not to leave New York without having made the trip. There was not much that was suitable for recording during the journey, though much to film, but we enjoyed every minute of it, in spite of the fact that our time in New York was almost at an end.

One last recording was of a New York taxi driver philosophising with his passengers.

No sound-picture of the city would be complete without at least a few words from a typical, hard-boiled, but kindly and voluble cab driver from the Bowery—and we obtained this, on our way to New York Central, from a character who expatiated at length on the wickedness and corruption of this, his native city.

And where, we asked him, would you choose to live if you could settle anywhere in the world?

His reply came without a second's hesitation. "New York, I guess," he said.

Equipment Under Test

THE Telefunken 75-15 is an attractive portable tape recorder costing £49 7s. and is supplied together with a reel of BASF double-play tape, a spare spool, circuit diagram and operating instructions. No microphone is supplied, the choice being left to the buyer and dependent on the type of recordings to be made.

The recorder has two speeds, $1\frac{7}{8}$ and $3\frac{1}{4}$ ips, giving over six hours playing time when using double-play tape. The maximum reel size is $5\frac{1}{2}$ inches which can be accommodated with the lid closed.

Ten controls are fitted. Six of these are push-button types mounted in two groups of three and the functions are; record, stop, replay, and, safety-erase lock, fast wind, pause. The remaining controls include a rotary switch selecting either radio or microphone, although there is no mixing facility; a gain control which adjusts the record level and replay volume; and a tone control to adjust the amount of treble on replay.

A slide switch is fitted so that the internal speaker may be muted when

monitoring with headphones, the internal speaker is also muted when an external speaker is plugged into the extension speaker socket.

The microphone and external speaker sockets are mounted on the top of the recorder just in front of the various controls. This layout enables quick connections to be made and also means that the trailing wires do not get in the way when making adjustments. Speed selection is achieved by means of a switch mounted between the two tape reels. A special screw driver is supplied to activate this. A tape counter and automatic stop facilities are also fitted.

The amplifier section uses three valves: EF86 pentode voltage ampli-

fier; ECC83 double triode amplifier; EL95 output pentode which is used as bias oscillator when recording and an EM84 is used as a recording indicator. This is a "ribbon display" type, well known for the ease with which peak levels of recording can be judged. Negative feed-back is adjusted by the speed switch to compensate the frequency response at each speed. HT is supplied by a bridge rectifier and resistance capacity smoothing network.

The recorder was very well packed and operated smoothly the moment it was connected up. After a short warm up it was put through all the usual tests and the results of these can be seen in Table 1.

TELEFUNKEN 75-15

THE MAGNAFON ZODIAC

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Mixing - Track Control -
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Socket

Complete
39 gns
or 4 Track 45 gns.
Legs 2 gns. optional

By E. A. Rule

Most of the distortion was produced by the output stage of the recorder which uses a EL95 valve. The signal-to-noise ratio was -40 dB and the erase head removed all trace of previous recordings. I must point out here that the power output of many domestic radio sets is quoted for 10 per cent distortion so that the figures for the 75-15 are not as bad as they may seem. Figures of 0.1 per cent only apply to expensive hi-fi amplifiers. A recorder in the semi-professional

Power output (RMS)	Distortion	} total harmonic measured at 900 cps
0.5 watts	2 per cent	
1 watt	3 per cent	
1.5 watts	14 per cent	
1.6 watts	20 per cent	

class, for example, may have distortion of about 3 per cent at maximum power output.

The 75-15 met the claims made except for power output when measured with a sine wave signal, under music or speech conditions a slightly higher power output could be expected.

The accompanying graph shows the frequency response obtained using the tape supplied and also when using a British manufactured long-play tape. It can be seen from this that only the type of tape supplied should be used if the frequency response is to be maintained. This is of course due to biasing, and not due to any fault of the tape.

Parts of a test recording made on both tracks were made visible with "Indicord," the new fluid which makes visible the oxide particles on a tape. The recording head on the model tested was seen, in this way, to be set too high, with the recorded

track travelling right along the edge of the tape, leaving a large gap in the centre. This deviation from a true course may result in a slightly lower signal-to-noise ratio when replaying pre-recorded tapes.

On the model tested the signal-to-noise ratio was a little better than -40dB. To test for distortion a signal was recorded at 900 cps 6dB below tape saturation level and replayed with a dummy load in place of the loudspeaker. This test also revealed that the absolute maximum power output was 1.6 watts, less than the 2.5 watts claimed.

Some motor noise could be heard and was noticeable mainly when replaying at low volume.

The erasure was very good and even an over-modulated tape was wiped completely clean. The bias wave form showed a very slight trace of distortion but this did not seem to introduce any extra noise on to the tape when recording. The level of noise between a virgin tape and one that had been erased on the recorder was only about 3dB, very good.

On a home test the 75-15 worked very well and some recordings made from a VHF tuner and replayed using an external hi-fi speaker were quite clean. However, the internal speaker sounded a little "boxy," and distortion was noticeable when the volume was tuned up above about 1 watt.



No wow or flutter could be detected except on a steady sine wave recording. Braking was good and the tape wound evenly on to the take-up spool, rewinding 1,800 ft. of tape in 4½ minutes.

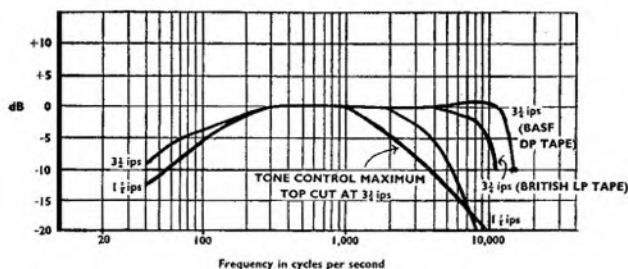
In general I found the recorder met the various claims made and that it was simple to use. The controls are nicely placed and clearly marked. The standard of workmanship is very high and it should give long service without any troubles.

The instructions I found a bit vague and I think that the layman may have some trouble sorting out the various connections. I also feel that at the price, all plugs for the various inputs could have been supplied with the recorder.

The 75-15 is a compact recorder ideal for normal domestic use.

MANUFACTURER'S SPECIFICATION

Speeds: 1½ and 3½ ips.
 Frequency response: 60-16,000 at 3½ ips; 60-9,000 at 1½ ips.
 Wow and flutter: Less than .3 per cent at 3½ ips; and less than 0.4 per cent at 1½ ips.
 Signal-to-noise ratio: Better than 40 dB.
 Maximum spool size: 5½ inches.
 Inputs: Microphone (2mV at 2Mohms), and radio (2mV at 50K ohms).
 Consumption: 40 watts approx.
 Size: 12 x 9 x 5½ inches (Portable model 12½ x 12½ x 4 inches).
 Weight: 16.3 lbs. (portable model 21 lbs.).
 Price: 43 guineas (portable model 47 guineas).
 There are two versions of this machine. The 75T-15, the table model with output stages only, and the portable model, designated the 75K-15.
 Manufacturers: Welmecc Corporation Limited, 147/8, Strand, London, W.C.2.



Frequency response of 75-15 showing marked differences achieved using the tape supplied and other tape

Foreign products flood U.S. market

EVER since January the tape recorder war has been on in New York's Times Square and garish 42nd Street areas. The Japanese are in with masses of machines, both toys and portables. Prices have dropped to an all-time-low. The Rosko portable sells for as low as \$18-88. Another Japanese line called the Echoder sells for 59 dollars.

Close on the heels of the Japanese come the German competitors. Phonotrix, for example, at 69 dollars. In this bracket we also see the Grundig mark.

After the 69 dollar bracket there is a jump to 120 dollars in the USA made machines, here such famous names as Webcor, Wollensak, V.M. and Pentron Stereo is of course very big business, and their prices jump around 50 dollars on all models to reach this category.

No comparison

There is no comparison between the USA market and ours. We do not have the groups of cheap merchandise; they do not have the middle class price lines we have; and our type of quality is really expensive there.

Just about now things may begin to collapse so far as the Japanese machines are concerned, April was the scheduled date when restrictions were to be imposed by the Ministry of National Trade and Industry. Dealers forecast that this was not likely to make so much difference since any increase in quality would affect the prices and the American buyer of Japanese products is a low price buyer anyway.

By
A. Campbell Gifford

A British audio executive's impressions of the tape market in the United States

However, Japanese importers said that they expected to land 100,000 recorders a month. One retail house agreed that they were bringing in 5,000 a month which were selling fast at \$29-95. Most distributors agreed that all this would have little effect upon most American machines.

All agreed that British machines they had seen and handled were good, some very good indeed. All agreed that it was a hell of a market to get into and make quantity sales.

Tape records

Pre-recorded tapes are all mixed up. In the last three years quite a few of the smaller firms have gone to the wall. Now no one seems to know what the future holds. Will it be slower speeds, two track or four track, reel or cassette?

Looking at the shelves of some of the stores, it seems as though there is a tape equivalent of almost every new disc, but they are all a bit pricey, often over double the cost of a disc. Stores say they're all slow movers compared with the discs.

Those who grouse about the toughness of the business here are wide of the mark when you compare things here with N.Y. Quite a few dealers here could learn a lot about a tape recorder demonstration from the sales-

man around 42nd Street. By the time they've talked to you for five minutes you realise that one of the things you need is a tape recorder. Even if you already have one, you're soon convinced that it's obsolete and certainly cannot give you what you want.

A new big threat to break tape price maintenance is evident.

Eastman Kodak, of Rochester, and Serval both announce entry into manufacture of $\frac{1}{4}$ in. and $\frac{1}{8}$ in. magnetic recording tape. Spokesmen of both companies indicate that new processes will enable them to make substantial reductions in prices.

Discs obsolete

Several are quoted as forecasting that prices could tumble during the next two years so low as to make discs obsolescent.

No comment is available from Kodak in the UK.

Reeves Soundcraft Corporation has completed a survey of the possibilities of the European market recently. They have offered no comment so far, but it has been indicated that they are not very impressed with the possibilities.

The offices of two Japanese representatives in London indicate that several inquiries have been handled lately regarding the possibilities of importing Japanese magnetic recording tape. The landed cost of this tape indicates that bulk supplies would here might mean a possible 50 per cent cut on retail prices, if importers were to be content with less than 100 per cent mark-up.



irish



Ferrosheen Process

WILMEX (DISTRIBUTORS) LIMITED

151-153 Clapham High St., London, S.W.4

TAPE RECORDING HANDBOOKS

ADVICE ON BUYING A TAPE RECORDER

By J. F. Ling 2/- (2/6 inc. postage)

Designed to help the newcomer through the maze of technical terms, specifications and facilities found in manufacturer's literature, with a chapter on the important features to check during an actual demonstration of a recorder.

Available from: 7, TUDOR ST., LONDON, E.C.4.

P. R. MILTON CONTINUES HIS SERIES OF ARTICLES. HE EXPLAINS

IN the world of electrical engineering, one frequently encounters the word "Decibel." Phrases like "Fifty decibels down," and "Plus or minus 3 dB" liberally adorn the advertisements, often to the confusion of the people for whom they are intended.

The decibel is an extremely useful tool, forming the basis of several units in acoustics and it is worth while to devote some time to its consideration.

Experiments have shown that when a sound is increased in intensity, the listener experiences a sensation of loudness which is roughly proportional to the logarithm of the change in acoustic power. It is therefore reasonable to use a unit which bears some relationship to the behaviour of our senses, and the Bel was devised, named after Sir Alexander Graham Bell, to express the relative magnitude of two powers.

In mathematical terms,

$$\text{Power ratio (Bels)} = \log \frac{P_1}{P_2}$$

The Bel is itself too large a unit to be used conveniently, so it is subdivided into *decibels*.

$$1 \text{ Bel} = 10 \text{ decibels (dB)}$$

Notice that these are purely relative units and have no meaning unless they are referred to some definite level of power. To say "ten decibels" without qualifying the statement is as silly as saying "I have a dozen," and leaving it at that.

Where the reference level is not stated, the implied level can usually be taken as 1 milliwatt, dissipated in a resistor of 600 ohms.

TABLE OF DECIBELS

Decibels	Voltage ratio
0	1:1
6	2:1
12	4
18	8
24	16
30	32
20	10
14	5
8	2.5
2	1.25
4=24-20	also 2.6
10	3.2
16	6.4

Rearranged this table becomes:

Decibels	Voltage ratio
2	1.25
4	1.6
6	2
8	2.5
10	3.2
12	4
14	5
16	6.4
18	8
20	10
22	12.5
24	16
26	20

THE FUNDAMENTALS OF SOUND AND ELECTRO-ACOUSTICS, PROVIDING DEFINITIONS OF SOME OF THE MOST OFTEN-USED PHRASES.

THE NATURE OF SOUND

Part Three: THE DECIBEL

It is common practice to express voltage ratios in decibel form and the following relationship is derived.

$$\begin{aligned} \text{dB} &= 10 \log \frac{P_1}{P_2} \\ &= 10 \log \left(\frac{V_1^2}{R} \times \frac{R}{V_2^2} \right) \\ &= 10 \log \frac{V_1^2}{V_2^2} \\ &= 20 \log \frac{V_1}{V_2} \end{aligned}$$

It can be seen that if the measurement of power and voltage are to be related by a factor of two, they should be measured across the same resistor. In practice it has become the habit of engineers to express voltage changes in decibels even though the impedances across which they are acting differ widely. In order to avoid confusion, the phrase "Decibels of voltage gain" is used, abbreviated to dBvg.

One volt is usually taken as the reference level in this case.

Log tables can be used in the calculation of decibels, but extreme accuracy is not often necessary, so that calculations can be simplified by using a slide rule, tables, graphs, or mental arithmetic.

The method involving mental arithmetic is based upon two easily memorised ratios:

A voltage ratio of two = 6 dB.

A voltage ratio of ten = 20 dB.

Division or multiplication can be carried out by adding or subtracting decibels, since

$$\log(A \cdot B) = \log A + \log B$$

Hence by starting at unity (0dB) and 10 (20dB) a table of decibels may be constructed.

The table as shown on the left can be extended by adding 20dB for each factor of 10, so that 50, for instance, becomes 34dB.

There are two methods of using a slide rule, in the calculation of decibels.

A piece of card approximately one foot long by one inch wide can be used for the first method. Mark off the length

of the "D" scale from 0 to 10 and subdivide it into 20 equal divisions representing decibels. The mark at 0dB is set to the reference voltage and the ratio in decibels can be read opposite the referred voltage on the D scale.

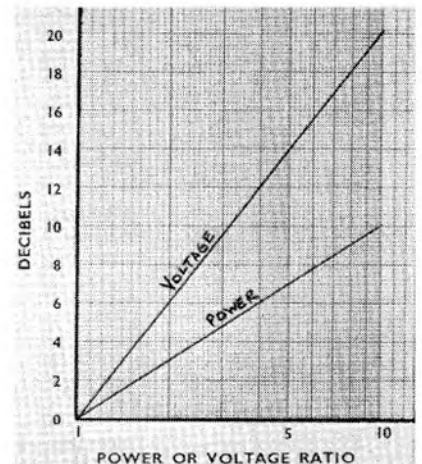


Fig. 2. Graph for the determination of Decibels from a ratio of voltage or power

The second method employs a log. log. slide rule. Set the figure 2 on the C scale against the 10 on the log.log. scale. Place the cursor over the ratio on the log.log. scale, and read dB's on the C scale. The ratio should always be greater than unity and fractions involved in calculating dB down should be inverted. An alternative to this method is to make a mark at 8.68 on the C scale. Decibels can be read on the D scale against this mark when either the 1 or the 10 is opposite the ratio on the log.log. scale.

A graph from which decibels in power and voltage may be obtained is given in Fig. 2.

In the next article, some units in acoustics which have a logarithmic base will be considered, and the performance of the ear will be discussed.

NEW BOOKS REVIEWED

By Alan Beaument

Generally speaking, books on scientific subjects fall into two categories—those which tell the reader in straightforward language how things work, and those which invoke mathematical hieroglyphics to prove why things work.

Here we have one of each kind.

The first is **High Fidelity Sound Engineering** (published by George Newnes Ltd., price 50s.), by Norman H. Crowhurst, an internationally-known figure in audio circles. This is an ideal book of reference for the serious hi-fi and/or tape-recording enthusiast and the semi-professional audio engineer who wish to familiarise themselves with up-to-date audio practices.

The author covers almost every aspect of the art giving clear and concise explanations of fundamentals followed, in many cases, by worked examples. Basic mathematics applicable to the calculations has been relegated to an appendix, so that the text can be read more smoothly than is usual in technical publications.

Beginning with the basic requirements and limitations governing the overall design of audio systems, for a variety of purposes, the text deals, in logical sequence, with signals in low-level circuits, e.g., resistance/capacity filters and correction networks, then with valve and transistor voltage amplifiers and on to power amplification.

Having dealt with electrical signals, two chapters are then devoted to transducers generally; various types of microphones, pick-ups and loudspeakers are described and there is an informative section on methods of loudspeaker loading.

The author then discusses the types of equipment necessary and the methods used to carry out comprehensive audio testing and the last two chapters are devoted to the selection and correct usage of units for complete sound installations, including some warnings of the pitfalls and fallacies which can confuse beginner and more experienced alike.

The book is well illustrated, with simplified diagrams and a variety of charts to assist the reader in understanding the text, but it does not attempt to be another "do-it-yourself" book and contains no circuits or constructional details for specific items. It is a reference handbook of wide application and will please any reader who wants facts without mathematical frills.

For the advanced student

Audio Frequency Engineering, by E. Haydn Jones (published by Chatto and Windus, price 35s.), is intended for the advanced student and the professional engineer and deals very thoroughly with the complex principles of acoustics, but it is written in such a concise, uncomplicated style that even the keen amateur could learn much from its pages.

The early chapters are devoted to the properties of acoustic waves, the investigation of behaviour of various types of sound sources and a physiological analysis of human hearing and speech (including defects which rule out any "standard" for hi-fi reproduction!)

The characteristics of speech, music, and various forms of noise are then described, followed by comprehensive chapters on architectural acoustics and the measurement of performance of audio equipment, electrically and environmentally.

Types of microphones and their usage, reproducers and enclosures, and magnetic and disc recording are all separately analysed, and the final chapter covers a subject not often found in audio handbooks—film recording.

Each chapter has so wide a coverage that detailed description of the contents is impossible here, but I venture to predict that the book's appeal will be wider than the author envisaged.

With a copy of each of these two books on his shelf, very few of the "audio man's" questions on principles and practice will remain unanswered.

Letters to the Editor

Small wonder American tapes are cheaper

THE comments of readers in recent issues concerning the running time of pre-recorded tapes and the apparent cheapness of tape in the USA reminds me of an experience I had some three years ago.

Thinking to take advantage of tape prices in the USA, I sent \$30 to one of my American contacts, asking him to purchase some tape for me.

About a month later I excitedly opened a parcel to find three reels of stereo tape records. The first a 7 in. RCA-Victor was \$12. The second a 5 in. reel bearing the same label was \$6, and another 7 in. reel, "King Cole Sings," was \$10.

I listened first to the "King Cole" tape. Although the recording quality was excellent, after a few minutes I had the uncomfortable feeling that something was missing. Then I realised that this "stereo" recording was nothing more than a full-track monaural recording dubbed from a monaural disc.

The large reel "Victor" came next, and once again the recording was of outstanding quality. I was amazed, however, to find the tape running out in 17 minutes. The 5 in. spool lasted only ten minutes, and both had been reasonably full of tape.

Closer examination revealed that the hub of the 7 in. reel was a full 4 in. in diameter, and that of the 5 in. no less than 3 in. in diameter. These reels, although apparently full, could not hold half of the normal lengths of tape.

Perhaps this will explain my rather rueful smile when "cheap" USA tape is mentioned.

I felt I was being taken for a sucker, too, in London recently, when I was charged 8s. for a 50 metre length of leader tape manufactured on the Continent. This was the "correct list price." The comparable length (166 ft.) of other brands is about half that price.

CHARLES H. STANDEN.
London, S.W.9.

POSTSCRIPTS

... whilst writing, may I add that I think your journal is the best tape recording magazine on the market. The articles are so easy to understand.

A/B E. PORTER.
H.M.S. Girdle Ness.

... congratulations and best wishes for your very interesting and excellent magazine.

BERNARD STEVENS.
Hainaut, Belgium.

B.B.C. "Sound" Programme

A magazine for radio and recording enthusiasts

Introduced by Douglas Brown

6.40 p.m. June 5

(A repeat of the programme broadcast on May 28)

QUESTIONS AND ANSWERS: In which listeners to "Sound" are invited to put questions to John Borwick and James Moir.

This week's guest: David Brook.

"Sound" is broadcast on alternate Sundays at 2.40 p.m. on Network Three

The next new programme is on June 11

Letters to the Editor

A mystifying and annoying phenomenon

YOUR contributor, Mr. Alan Beeby, has experienced a phenomenon which can be both mystifying and annoying. Hi-fi recorder circuits, indeed any similar amplifier, can become a receiver of radio signals and record them along with the programme material. This can give rise to ghost voices which are easy to recognise and prevent, but ignition interference in its usual form of odd pops and crackles can start all sorts of panic.

Some types of portables are, for obvious reasons, particularly prone to ignition pick-up, and great care must be taken to avoid it. I know of one portable of internationally famous make, owned by a film company, which disgraced itself so often that a variety of screening boxes have been made for it. It is now so heavy it needs a small van to carry it.

D. C. COMPER

London, S.W.15.

Star service

I WAS very interested to read of the new Star Service spot in your most progressive magazine.

I have been a regular reader since its inception, and I think this new feature will be welcomed wholeheartedly by tape enthusiasts everywhere.

Since being bitten by the tape bug some years ago, I have been amazed at the lack of knowledge of some dealers selling tape recorders, even in a large city like Glasgow. The number of specialist dealers is very few, but one I can thoroughly recommend is G. H. Steele, 141, St. Georges Road, Glasgow, C.4.

The proprietor is a keen tape club member, and new recruits to the hobby can be sure of getting all the gen they need, plus, in my opinion, the best after sales service in the city. I know, I have had to use it.

Wishing *Tape Recording Fortnightly* all the very best, because it is the best.

JAMES KENT

Glasgow, W.4.

Have you an idea, a complaint, or a bouquet to hand out?
Write to us about it. Letters not for publication should
be clearly marked.

We need standardised colour coding for tapes

WE believe that there are many users of tape recorders in this country, and, in particular, people who have not possessed machines for very long, who may become confused and misled by various attempts to colour code magnetic recording tape. Perhaps some of these people may be interested to learn that the British Standards Institute some while ago proposed a definite colour coding for recording tape on the following basis:

All trailer ends would be red.

Standard play tape would be fitted with white leaders.

Long play tape would be fitted with green leaders.

Double play tape would be fitted with blue leaders.

The reasons lying behind this colour coding are self apparent and can prove to be extremely useful, particularly where a tape becomes separated from its original box. Furthermore, it is easy to distinguish whether one is using the upper or lower track and this is of

further advantage in the case of quarter track recorders.

Whilst this is at present only a proposed recommendation, it is interesting to note that the British Standards Institute are endeavouring to obtain international recognition. However, like so many things which require international approval and particularly those pertaining to Standards of the Radio and Electrical industry, this recommendation is not being very well received by certain makers.

Surely it is in the interests of manufacturers, retailers and the public alike, that a definite standard was adopted for all makes of recording tape. If this were done, one would always know, irrespective of the make of the tape, whether the upper or lower tracks were being used, and, more important, whether the tape was standard, long or double-play.

WILMEX LIMITED.

London, S.W.4.

The "Tapewriters' Circle"

I AM in complete agreement with the sentiments you express in "We Take the View" (April 19) regarding assistance to amateur tape recordists by manufacturers and dealers, and am particularly interested to note that you stress the importance of creative recording.

Almost two years ago, some tape friends and myself formed a small group which we called the "Tapewriters' Circle." The object of the association being to produce tapes (3 in. or 3½ in. spools recorded at 3½ ips) containing original short stories, personal narrative, poetry, playlets, skits, etc.

There is no entrance fee: for practical purposes the only rules are that all the material offered to the Circle shall be original, and the tapes, which are circulated by post from one member to another, are not retained for more than four days. Enclosed with each tape is a sheet of paper whereon all the members who listen to the tape write their comments.

Although I have had "mentions" about the Circle in various tape magazines and canvassed my tape acquaintances, it has taken almost two years to obtain a membership of eight.

I, and the other members of the Circle, are at a loss to understand this lack of interest. It seems that few people wish to be "creative" nowadays.

Surely all the tape recordists in the country are not spending all their recording time putting the "Top Ten" on

tape. Surely some recorder owners have the urge to relate some out-of-way personal experience—some story (fact or fiction) which they have always wanted to tell. There must be someone who has a playlet they would like to share—some poem which they cherish, but will never be published.

We are not a highbrow literary society on tape—all that is requested is a tape containing something *original* and of reasonable interest to other people. Such a tape will be circulated among the members, and eventually returned to the contributor, along with the "comment sheet."

May I wish your excellent magazine the success it certainly deserves.

FRANK WARREN.

Watford, Herts.



WILMEX TO DISTRIBUTE AMPEX TAPES

AN agreement has been signed between Wilmex (Distributors) Ltd., and Ampex (Great Britain) Ltd., for the exclusive distribution in Great Britain of Ampex tape records—United Stereo Tapes.

UST caters for a wide range of tastes with composers including Mozart, Tchaikovsky, Bartok, Hindemith, Dvorak, and Beethoven. Conductors and orchestras such as Sir Malcolm Sargent, Arthur Rodzinski, Leopold Stokowski, The London Symphony Orchestra, and the Vienna State Opera, are featured on the tapes which will be released under the *Audio Fidelity, Concertapas, Everest, Vox,* and *Westminster* labels.

The first release covers some forty classical recordings—four-track stereo at 7½ ips. A substantial selection have now been cleared for U.K. copyright and negotiations are proceeding for the clearance of the majority of remaining titles.

Distribution of UST will commence within the next few weeks, and initial catalogues are now available.

Wilmex (Distributors) Ltd., Wilmex House, 151/153, Clapham High Street, S.W.4.

Clarion reduced

THE retail price of the Clarion Mark 1 has been reduced from 25 guineas to 19 guineas with effect from Monday, May 1. This reduction comes as a result of increased production of the model and improved world-wide distribution.

In a letter to wholesalers and dealers, the distributors, G.B.C. Electronic Industries Ltd., state that the Clarion Mark 1 will remain unchanged until at least the end of 1961.

G.B.C. Electronic Industries Ltd., 121/123, Edgware Rd., London, W.2.

PRICE FIXED

THE price of the Voicemaster tape recorder which was introduced at the Audio Fair Festival has been provisionally fixed at 73 guineas, state the Gramophone Company. This is the recorder fully described in our April 5 issue, which can be modified into a record reproducer by purchasing an optional Disc Kit.

The Gramophone Company, Hayes, Middlesex.

B.S.R. expands

ANNOUNCING that sales and production of all products of Birmingham Sound Reproducers Ltd. established records in 1960, the directors reveal two new subsidiary companies have joined the group.

These are Tape Heads, formerly Bradmatic Productions Ltd., of 124-126, Albert Road, Birmingham, 21, and P. A. Marriott & Co. Ltd., of Wembley, Middlesex.

Birmingham Sound Reproducers Ltd., Powke Lane, Old Mill, Cradley Heath, Staffordshire.

New Products

NEW JAPANESE MODEL

YET another Japanese tape recorder has appeared on the market. This latest model is the Dokorder, a two-speed machine retailing at £39 10s., manufactured by the Denki Onkyo Co. Ltd., of Tokyo.

The quoted frequency response at the top speed of 3½ ips, is 200-5,000 cps, and at 1½ ips, the manufacturers quote 200-3,000 cps. Wow and flutter figures are given as 1.2 per cent (maximum) and 0.7 per cent (average).

Three-inch reels are incorporated, providing a maximum playing time of 64 minutes using double-play tape at the slower speed. Rewind is achieved by a hand lever.

The Dokorder measures 7½ x 3½ x 2½ in., and weighs just under 3 lb. Power is derived from five 1.5v Penlight cells (D.14), and the battery life is claimed as 3 hours for continuous use. Six transistors are used in the printed circuitry.

Output is rated as 100mW through the 2½ in. permanent magnetic loudspeaker. The output socket impedance is 8 ohms.

A number of accessories are included in the price. These are: crystal micro-



The Dokorder

phone, tape, monitoring earphones, splicing tape, and a polishing cloth. Also available as optional extras are a leather case with shoulder strap (£2); telephone pick-up (19s. 6d.); remote switch/camera cable (15s.); extension lead (5s. 6d.); and 220-240v AC mains adaptor (£3 10s.).

U.K. Agents: Samuel Lewis (City) Limited, 200a Upper Thames Street, London, E.C.4.

New heads by British company

SPECIFICALLY formed to improve the quality of magnetic tape heads, Scopetronics Ltd., a British company, is to manufacture them to precise specifications.

The new heads are manufactured from a basic design of brass body. This has the advantage that the tape heads are directly interchangeable for the different track widths without alteration of the fixing centres.

The manufacturers also claim that the characteristics of a quarter or half-track head can be very nearly matched so that circuit alterations are not required.

Directly interchangeable heads are produced in half-track, two half-tracks, and two quarter-tracks. Another feature

is that a quarter-track head, having tracks 1 and 3, can be turned on a vertical plane through 180 degrees, so providing tracks 2 and 4. Fixing holes are located at either end of the head.

The heads are available with either solid or laminated cores and lamination thickness can be varied to suit special requirements. For standard sample heads, .010 inch MuMetal laminations are used.

A wide range of impedances and inductances are available, and in most cases samples can be produced to suit individual manufacturers' requirements. Sample range of impedances are as follows: erase (low impedance) 500 ohms at 60,000 cps; Record (medium impedance) 2,500 ohms at 100,000 cps; and Playback (high impedance) 4,500 ohms at 100,000 cps.

This new range of heads is, for the moment, only available to the trade.

Scopetronics Ltd., 27, Soho Square, London, W.1.

Grundig distributors

NEW distributors for Grundig tape recorders and dictating machines in Eire are announced.

As from April 4, Walkers Ltd., of Upper Liffey Street, Dublin, will be taking over the agency formerly held by Brown Brothers (Ireland) Ltd.

The new distributors will carry the complete range of Grundig tape recorders, ranging from the newest battery operated transistorised portable TK1 at 29 guineas, to the fully stereophonic TK60 at 128 guineas. They will also represent the Stenorette and Memorette dictating machines, and a full stock of spares and accessories will be carried.

Their service department is also fully equipped to deal with servicing and enquiries on behalf of dealers.

TEACH-U-TAPES

SINCE their recent introduction, Teach-U-Tape tape records marketed by K.L.P. Film Services have had an encouraging initial response which has resulted in price reductions.

The price of individual Teach-U-Tapes is reduced to £1 15s. each, while the complete course under Cat. No. TUT2 is reduced to £7 10s. All orders to date are being credited with the difference in price.

K.L.P. Film Services, 3, Queen's Crescent, Richmond, Surrey.

News from the Clubs

THE second Congress of British tape recording clubs is to take place at the Russell Hotel, London, on June 10.

Mr. Timothy Eckersley, Head of the BBC Central Programme Operations (Recording) will be present and will speak to the Congress on recording today. Also addressing those present will be the Editor of *Tape Recording Fortnightly*.

As last year, the member clubs of the **Federation of British Tape Recording Clubs** will meet first for their Annual General Meeting. Afterwards the reception and get-together of representatives of clubs will be open to any club.

The Secretary of the Federation, Alan Stableford, has already had a number of acceptances from clubs who will be attending, but he has asked us to point out that invitations are not necessary for attendance. He would appreciate a postcard of intention, although he stresses that this is not necessary. If you can get to London, this would be a worthwhile journey.

This is the one chance in the year that club members have of meeting their counterparts from all over the country. Last year, about two dozen clubs associated themselves with the venture, and they were represented by over 50 members. This is certain to become an important regular event in the tape recording calendar, but it is up to the clubs to support it.

This is your day.

Five recordings were submitted by members of the **JOHANNESBURG** society for a competition held at one of their recent meetings.

One of the tapes was entered by Derek Worman producer of that exemplary tape *Africa Sings*, a winner in the 1959 International Contest. His tape for the club contest, again included a native singing group playing its own composition. It was awarded the first prize of a head demagnetiser which was straightaway donated back to the club for the next competition.

Other titles in the contest included *An Illustrated Talk on Swiss musical boxes*, and *A Rehearsal of the show "King Kong,"* from the all African cast production now running in London. Also heard, but not competing for a prize was *Contact Microphone*. This tape, by Kenneth Miller of New York, was awarded the humorous prize and led the composition section of the 1959 International Contest.

The second prize of a splicer went to Gus Lawrence for his tape *A Traffic Robot in Germiston*.

Other activities of this 73-strong club have included the recording of a choir, using three stereo and four monaural recorders, and a Harpsicord recording session.

A talk on artificial echo, illustrated by tapes and blackboard sketches was given by the chairman at their March meeting. This was followed by a demonstration of the Tandberg Series Six recorder. Members also heard a playback of Norman Paul's *The Rest is Silence*, last year's "Tape of the Year" and the winning tape in the International Contest.

Competitions are also growing popular amongst local clubs, the latest being organised by the **CAMBRIDGE** society. Local dealers, Messrs. G. P. Reece, have offered a supply of tapes to the member who scores the highest aggregate in their monthly competitions for feature and sound effect tapes. The prize will be awarded at the A.G.M. and Dinner.

Close contact with these dealers has been achieved, and at their April 12 meeting a member of the staff visited the club with a number of recorders for demonstration. On show were the complete Philips range, a Reflectograph, an EMI TR52, Wharfedale speakers, and a Radford amplifier.

Monaural and stereophonic recordings were made, and the evening came to a close with a grand stereo finale of rifle and cannon shots, racing cars, and a brass band.

What can be described as one of the greatest attendances ever for a tape club was recorded at the April 6 meeting of the **RUGBY** society. Over sixty friends and invited guests made their way to the Red Lion, Sheep Street, on that date for the club's "open night."

Officials from the Corporation were present, plus members representing six of the established tape clubs. Among these were Mr. W. Tisdale, Mr. Lambert, and Mr. Phinnimore, respective chairmen of the **Coventry, Kettering, and Northampton** clubs, and secretaries Ken Fricker, K. R. Smith, and David Derbyshire of the **Nottingham, Hinckley, and Leicester** clubs. Also present was Mr.

Members of the Dartford Club in their new plush headquarters. Included left to right are the secretary Ted Foreman (second position), chairman Les Coates (fourth), and committee member Judith Foreman (seventh)



Nelson Woerner, the newly-appointed UK representative of the **Universal Tape Network**.

Refreshments for this huge gathering were provided free of charge, although the members did manage to defer some of the expense by charging 2s. a head for the quizzes held during the evening. The quizzes proved quite popular and the prizes of 50 cigarettes and a bottle of wine were won by Mrs. R. C. Cotgrove, wife of a Rugby member, and Mr. Norman Littlewood, joint secretary of the Nottingham club. A third prize of a bottle of whisky, donated by Mr. Woerner, was won by Mr. Tilcock.

On show and in use during the festivities was the Magnavox tape recorder, the subject of a lengthy discussion at a recent meeting when members decided to purchase a recorder out of club funds.

During the evening arrangements were made for a party to visit the Audio Festival. In the event 27 seats were booked on a special coach, and these members and guests travelled to London on the following Sunday. After a tour of the exhibition, the party took the opportunity to have a look at London, blessing the creation of the M1, which gave them just that little bit of extra time.

A change of venue and frequency of meetings has been effected by the members of the **DARTFORD** club. In future meetings will be doubled and will take place on the 2nd and 4th Thursdays of each month, at 41, Windsor Drive.

The members have made contact with the **Australian Tape Recording Association** through a member of this society who had emigrated from Dartford.

Their recent activities have included the recording of a church service, achieved on the occasion of the retirement of the Vicar.

Using a Vortexion and a Film Industries microphone, they effectively recorded the choir and organ despite a last-minute hitch when a power cable blew up. Some double-quick thinking by one of the members reconnected the recorder in time for the start of the service.

An edited version of the tape, later played back to the congregation using the Vortexion plus a Quad amplifier and a Lowther speaker, gained for the club a small slice of publicity in the local Press.

The April 10 meeting of the **COTSWOLD** society consisted of a series of members' actuality recordings. Preceded in each case by a brief technical description of the equipment used, the tapes ranged from birdsong on a Grundig Reporter, and train sounds on a Fi-Cord, to a Beethoven sonata for piano and

(Continued on page 33)

Classified advertisements

Rate—Sixpence per word (minimum 5s.); Trade, ninepence per word (minimum 10s.); box numbers, one shilling extra. Payment with copy. Copy should be sent to Advertisement Department, "Tape Recording Fortnightly," 1, Crane Court, Fleet Street, London, E.C.4.

SERVICES

Tape recorder need repairing? Then let London's Largest Tape Recorder Specialists do it for you, expertly and economically. Essex Tape Recorder Centre, 2, Maryland Point Station, Stratford, E.15.

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TAPE RECORDING, March 1958-December 1959. Offers—13, College View, Llandoverly.

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SHAPING SOUND

(Continued from page 19)

original sound before recording—i.e., having seen what is wrong with a transformation, go back to the beginning and try to compensate for this in the creation of the sound. This can sometimes have an effect, but again less often than one would wish. Speed transformation will so easily swamp all but the most emphatic difference in the raw material.

It has often been said that some of the most successful results in *musique concrète* are obtained when the composer doesn't try to impose his will too strongly on the source material, but instead listens to it together with its most effective-sounding transformations and then lets these suggest their own arrangement—a sort of sonic equivalent of that branch of modern art which is called *objets trouvés*.

One quite characteristic quality of *musique concrète* is that the pitch relationship between the fundamental and partials of each constituent sound remains unaltered by transformation (unless any frequency band is filtered out completely). This in itself is both a strength and a restriction: it helps to give unity to a work derived from a single sound or range of sounds, but it severely hampers development.

But in electronic music, on the other hand, every sound is created individually from electronic sources, so that the harmonic structure of each new element of a work is completely free. Where *musique concrète* has restrictions electronic music offers new freedoms—and this is the fundamental difference between the two.

News from the Clubs

(Continued from page 31)

violin and a full string orchestra. Other tapes were made on an SP4, Vortexion and Grundig TK30.

An edited version of the tape recorded during a visit to London and the Audio Festival, including tube trains and other local colour effects, followed, and the meeting closed after a frequency response test demonstration had been given with a signal generator, step attenuator and valve voltmeter.

Just over a fortnight later members welcomed Messrs. Tillett and Evans, chief development engineers of Daystrom Ltd., the Gloucester firm, who gave a demonstration of stereo record reproduction under conditions approximating as closely as possible to the home. Particular appreciation was expressed for the performance of the "Cotswold" loud-speaker system which was described by one member as "fabulous."

Their latest meeting, on May 1, saw a programme of colour slides complete with tape commentary. This was presented by Mr. Clifford Benn who had produced his show under the heading of "Green and Pleasant Land"—a study of views in England and Wales, which ended with shots of the International Eisteddfod at Llangollen.

A further selection of slides, accompanied by music and verse, showed the scope for creative imagination.

The third tape in their hospital series is now completed. Ranging from a brass band quartet to recordings at the Scouts' Gang Show. The tape is edited and introduced by Peter Duddridge and Peter Turner.

Rock 'n' Roll seems to be the order of the day for members of the **PLYMOUTH** club since they completed the recordings for their talent contest. Three of the four finalists out of 25 entrants featured this type of music, and it has grown on to the members who are keenly dubbing-off their own tapes.

Continuing along these lines, members have visited four Rock Groups to make private recordings for the players who wished to cut some discs.

The contest, organised with the assistance of EMI Records Ltd., has been described as one hundred per cent successful. The winning tapes are now in the process of editing for final despatch to EMI who may be able to use them commercially.

The recordings were made at 15 ips on a Ferrograph, and six microphones, plus a six-way mixer were employed.

Constructive criticism on the running of the contest was received from the entrants at a special meeting for playback. The points made are to be borne in mind for the next contest which secretary John Baker said will be held in the near future.

A documentary tape on their town has been commenced by members of the **WALSALL** club. A time limit of three months has been set for this project, and a committee has been formed to allot specific areas and subjects for coverage.

Members are also currently engaged on preparing tapes for a contest to find the best and most original humorous tape. A 5-in. reel of tape is to be awarded to the winning producer.

A "Variety Hour of Tape Recordings"

CLUB MEETING DIARY

Is your club included in this list? If not, send details, on a postcard please, including date of the next meeting.

ACTON: Alternate Fridays at the King's Head, Acton High Street. (June 9.)

BATH: Alternate Wednesdays at St. Mary's Church Hall, Grove Street. (May 31.)

BETHNAL GREEN: Every Friday at Shoreditch Tabernacle, Hackney Road.

BIRMINGHAM: Every Monday at the White Horse Cellars, Constitution Hill.

BIRMINGHAM (SOUTH): Alternate Mondays at Strickley Institute, Hazelwell Street, Strickley. (June 5.)

BLACKPOOL: Every Wednesday at "Habonim," Lonsdale Road, off Lytham Road.

BOURNEMOUTH: Alternate Tuesdays at the Civil Defence Centre, Holdenhurst Road. (June 13.)

BRIDGWATER: Alternate Tuesdays at Erio's Radio, West Street. (June 13.)

BRIGHTON: Every Wednesday at Fairlight School, Pevensey Road.

BRIXTON: Every Tuesday at The White Horse, Brixton Road, S.W.9.

CAMBRIDGE: Every Wednesday at the Mitre Hotel, Bridge Street.

CATFORD: Every Friday at St. Mary's C.E. School, Lewisham, S.E.13.

CHESTERFIELD: Every 3rd Monday at the Yellow Lion Inn, Saltergate. (June 12.)

COTSWOLD: Fortnightly, alternating Monday and Thursday, at the Theatre and Arts Club, Cheltenham. (June 15.)

COVENTRY: Alternate Thursdays at Queens Hotel, Primrose Hill, Coventry. (June 15.)

was organised by the recently-formed **REDDITCH** society at the Talbot Hotel, Redditch on April 27, in an endeavour to advertise the existence of the club, and to get prospective members interested in the hobby.

Although no details of the show are yet available, those attending had had everything laid on for them, including light refreshments, available between recordings.

Details of this new society are available from the secretary, Miss B. J. Wiggett, 3, Yvonne Road, Crabbs Cross, Redditch.

After agreeing that they were not likely to achieve any success with their proposed space story competition tape, members of the **ILFORD** society decided to attempt a subject put forward by member Fred Faulkner. The original subject was scrapped when a need for quality actors arose. The new subject is said to need only a few spoken words, which will be amplified by effects portraying the theme in sound.

Experimental "takes" were recorded and later the club went "on location" to a nearby side-street to record actuality sounds. Ken Hartman joined Fred Faulkner to lead the recording sessions. They are all being very secretive about their proposed BATRC tape, but perhaps this is just as well.

A recent issue of the monthly "Audio Star" newsletter gives some club statistics. These provide the information that average attendance is twelve, membership is thirty, and that eleven manufacturers have given demonstrations in the club's 15 months' existence. They now have four library tapes, the latest additions being an unedited transcription of a talk on magnetic tape by Mr. Saunders of EMI, and an edited version of the club's question time. In production are two tapes entitled "Archive Discs" and "Meet the Members." For the latest meeting, May 23, Mr. P. E. Poland of Challen Instruments Ltd., demonstrated the Minivox battery portable.

CRAWLEY: 1st and 3rd Mondays in month at Southgate Community Centre

DARTFORD: 2nd and 4th Thursdays at 41, Windsor Drive, Dartford.

DOVER: Alternate Mondays at The Priory Hotel. (June 12.)

DUNDEE: Alternate Mondays at The Salvation Army Hostel, 31, Ward Road. (June 5.)

EASTBOURNE: Alternate Saturdays at Hartington Hall, Bolton Road. (June 10.)

EDINBURGH: 1st and 3rd Fridays at 22, Forth Street, Edinburgh 3.

ENFIELD: Alternate Wednesdays at Bush Hill Park School, Main Avenue, Enfield. (June 7.)

GRANTHAM: Weekly, 1st week in month, Wednesday; 2nd, Monday; 3rd, Thursday; 4th, Friday, at Grantham Technical College, Avenue Road.

GRIMSBY: Alternate Tuesdays at the RAFA Club, Abbey Drive West, Abbey Road. (June 6.)

HARROW: Alternate Thursdays at St. George's Hall, Pinner View, North Harrow. (June 1.)

HINCKLEY: Alternate Wednesdays at The Wharf Inn, Coventry Road. (June 7.)

HUDDERSFIELD: Ring Huddersfield 5820 for details from S. Blackstone Esq.

ILFORD: Every Tuesday at the RAFA Rooms, Cranbrook Road.

IPSWICH: Alternate Thursdays at the Art Gallery, High Street. (June 8.)

KEIGHLEY: Alternate Wednesdays at the South Street Sunday School Rooms. (June 14.)

KETTERING: Alternate Wednesdays at the Rising Sun, Silver Street. (June 7.)

LEEDS: Alternate Fridays at 21, Wade Lane, Leeds 2. (June 9.)

LEICESTER: 1st and 3rd Friday at Bishop Street Reference Library.

LONDON: 2nd and 4th Thursdays at the Abbey Community Centre, Marsham Street, S.W.1.

LUTON: 2nd and 4th Tuesdays at Flowers Recreation Club, Park Street West, Luton.

MAIDSTONE: Every Thursday at the Ex-Services Club, King Street.

MANCHESTER: Every Saturday, 6 p.m., at 20, Naylor Street, Hulme, Manchester 15.

MIDDLESBROUGH: Every Tuesday at 130, Newport Road.

NOTTINGHAM: Alternate Thursdays at the Co-operative Educational Centre, Broad Street. (June 8.)

NORWICH: 4th Tuesday at the Golden Lion, St. John's Maddermarket.

PONTYPOOL: Every Monday at the Hospitality Inn, Crumlin Road.

PLYMOUTH: Alternate Wednesdays at Virginia House, Plymouth. (June 14.)

RUGBY: Alternate Thursdays at the Red Lion, Sheep Street. (June 1.)

SOUTHAMPTON: 2nd and 4th Thursday at The Bay Tree Inn, New Road.

SOUTH DEVON: Alternate Wednesdays at the Man Friday Cafe, Torwood Street, Torquay. (June 14.)

SOUTH-WEST LONDON: Every Wednesday at Mayfield School, West Hill, S.W.18.

STAFFORD: Alternate Tuesdays at The Grapes, Bridge Street. (June 13.)

STEVENAGE: Alternate Tuesdays at the Tenant's Meeting Room, Marymead. (June 6.)

STOCKPORT: 1st Friday at the Unity Hall, Greek Street.

STOKE NEWINGTON: Every Wednesday at 53, Londesborough Road, N.16.

WALTHAMSTOW: Alternate Fridays at 22, Orford Road, E.7. (June 2.)

WARE: 2nd Tuesday at The Old Brewery Tap, High Street.

WARWICK: 1st and 3rd Wednesdays in Room 18 of the Royal Leamington Spa Town Hall.

WEST HERTS: Fortnightly, alternating at the Cookery Nook, Watford (June 14) and Heath Park Hotel, Hemel Hempstead. (June 28.)

WEST MIDDLESEX: 2nd Thursday at the Railway Hotel, Station Road, Hampton, and 4th Thursday at St. George's Hall, Lancaster Road, Southall Broadway.

WALSALL: Every Wednesday at 113, Lichfield Street.

WEST WALES: 1st and 3rd Thursdays at The Meeting House, New Street, Aberystwyth.

WEYMOUTH: Alternate Wednesdays at The Waverley Hotel, Abbotisbury Road. (June 14.)

WINDSOR: Every Thursday at The Royal Adelaide Hotel.

WINCHESTER: Every Friday at The Ship Inn.

WOOLWICH: Alternate Mondays at the North Kent Tavern, Spray Street, Woolwich. (June 5.)

YORK: Every Monday at 11, Southlands Road, off Bishopthorpe Road, York.

Unless otherwise stated, meetings start between 7 and 8 p.m.

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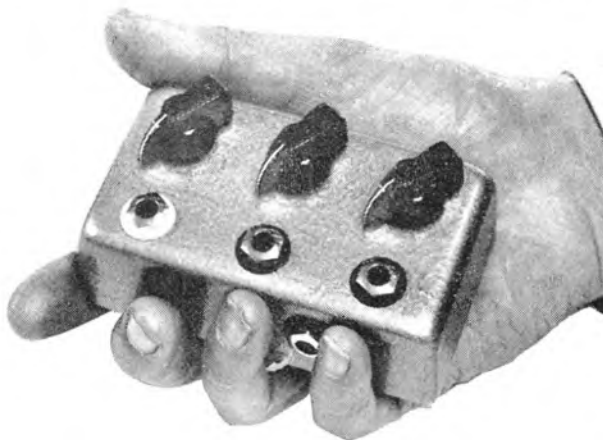
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